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The Response of Central Texas cave drip sites to Extreme Events: Implications for Paleoclimatology

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The Response of Central Texas cave drip sites to Extreme Events: Implications for Paleoclimatology

by

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Dedication

I dedicate this thesis to my family, for their unwavering support and encouragement. Thank you. I love you all, and may the Lord bless you.

Acknowledgements

I would like to thank all who assisted me in the creation of this thesis, including Dr. Banner, Dr. Breecker, and Dr. Musgrove, for their assistance in running samples, interpreting the results, and organizing the research project. I would also like to thank the owners and managers of Inner Space Cavern, Cave without a Name, Westcave Preserve, and Natural Bridge Caverns for allowing members of the Banner Research group to collect samples on their properties. A resounding thank-you to all student members of the Banner Research group, past, present, and future, for taking time out of their busy schedules to visit each of these caves at least once a month and collect much of the data I used for this thesis. I would also like to thank L. Tian and Y. Gao from the University of Texas at San Antonio for allowing me to use the oxygen isotope data they collected from Hurricane Harvey.

Finally, I would like to thank my parents for always encouraging me in my academic pursuits, my siblings for their sympathy and help, my friends for keeping me sane, and the Church of Jesus Christ of Latter-Day Saints for giving me direction. Thank you all for your love and support.

Abstract

The Response of Central Texas caves to Extreme Events: Implications for Paleoclimatology

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As global climate changes, extreme weather events such as droughts and floods are hypothesized to become more frequent and extreme. Therefore, understanding the geographic range, intensity, and frequency of extreme events in the past is important to provide context for future changes. Speleothems have the potential to record these events. This study investigates the response of central Texas cave drip sites to extreme weather events. Drip sites were from three deep caves (10 sites) and one shallow cave (1 site). Deep caves are defined in this study as those caves with high winter speleothem calcite growth rates and lower summer speleothem calcite growth rates, shallow caves are those with high summer growth rates and lower winter growth rates. From the resulting observations, it was hypothesized how such events may be preserved in a speleothem record, if at all. To investigate this, the drip rates and oxygen isotope ($\delta^{18}O$) responses of cave drip water sites, as well as calcite growth rates for calcite precipitated on artificial substrates below the drip sites, of eleven sites in four central Texas caves over eight years (2010-2018) were analyzed. The study period includes three extreme events: a historic drought (2011), a

hurricane (2017), and a historically wet fall season (2018). Using a maximum drip rate versus coefficient of variability curve the sites used in this study were defined as diffuse (long water residence-time in the epikarst), conduit (short residence time), or intermediate (intermediate residence time). A weighted running mean model using the unique isotopic signature of Hurricane Harvey (2017) was used to assign residence times. Diffuse sites were shown to have a 34.5-month residence time on average, conduit sites were shown to have a residence time of 18 months on average, and intermediate sites have a 27-month average residence time. This study shows that these short-term events are only likely to be preserved in conduit to intermediate sites. Events that occur in the summer, a regional period of slow to no calcite deposition or speleothem growth, are less likely to be preserved. As would be expected, those events that last longer, or have a longer recovery time, are more likely to be preserved. The most likely preservation styles of the studied events, based on a combination of the magnitude and duration of the drip water response, as well as the statistical significance and commonality of the response, are as follows: 1) droughts show statistically significant longer-than-average periods of low to no growth, with no isotopic response , at 2 of the 11 sites; 2) tropical storms show an abrupt and historic isotopic low (drip water depleted in $\delta^{18}O$) followed by a multi-month return to baseline isotopic values with no growth rate response, seen at 2 of the 11 sites; and 3) abnormally wet periods show a statistically significant isotopic low, observed at 5 of the 11 sites, which can be coupled with a growth rate increase, this combination was observed at 2 of the 5 sites showing a significant isotopic low. These results indicate that in paleoclimatology studies investigating extreme climatic events, deep-cave temperate speleothems chosen should be those that are supplied by conduit drip sites and have higher growth rates. Monitoring studies of cave drip sites can be used to identify sites that fit these criteria and thus have application to paleoclimate studies.

Table of Contents

List of Tables

List of Figures

Introduction

As global climate continues to change, it is predicted that both the intensity and frequency of extreme weather events, such as storms, droughts, and the natural phenomena associated with them, will increase (Tebaldi, 2006). Therefore, knowing how areas around the globe have been impacted by a warmer climate in the past is becoming increasingly important, as these responses may give insight into what can be expected in the future. To increase our understanding of past responses to extreme weather events, this study examines the drip rate response, isotopic response, and calcite growth rate response of eleven drip sites in four central Texas caves to determine drip site response to extreme weather events. These extreme events studied are a historic drought (May-December, 2011), Hurricane Harvey (August 25-29, 2017), and an autumn with historically high rainfall (September-November, 2018). The study incorporates data collected between 2010 and 2018. Cave drip sites were characterized as conduit, intermediate, or diffuse, by comparison of the maximum drip rate and coefficient of variation of the drip rate. Conduit sites are those sites fed by drip water that has a short residence time and thus little mixing in the epikarst, they are characterized by having extremely variable drip rates and often high drip rates. Diffuse sites are those sites fed by drip water with a long residence time and thus significant mixing in the epikarst, they are characterized by having slow and steady drip rates. Intermediate sites fall between these two endmembers. The isotopic signature of Hurricane Harvey (2017) rainfall was used as a unique isotopic tracer, similar to what is described in Frappier et al. (2007) to help model the drip water residence time of each site. Knowing how modern cave drip sites respond to extreme events, and how those responses are likely to be preserved in the modern speleothem calcite record, will allow more robust interpretation of the speleothem paleoclimate record.

Chapter One: Background

SPELEOTHEMS IN PALEOCLIMATOLOGY

Speleothems, or cave formation, calcite ($CaCO_3$) are often used as a paleoclimate proxy for precipitation (Muñoz-García et al., 2016). Along with other paleoclimate proxies including ice cores, tree rings, and corals, speleothems can be useful in interpreting past climate (Casteel and Banner, 2015). Speleothems are valuable in paleoclimatology studies for several reasons. Speleothems grow in protected environments over thousands of years, they can be precisely dated using U/Th (Latham and Schwarz,1992) or radiocarbon (Genty and Massault, 1999; Carlson et al., 2019) dating up to the semi-annual scale, they can be found worldwide in karst localities, they are often present in environments that are independent of sea level changes, and they contain several paleoclimate proxies including radiocarbon, stable carbon and oxygen isotopes, as well as several trace elements such as magnesium and strontium (Wackerbarth. et al., 2010) that can give information on the climatic conditions of the area above the cave. Of these proxies, stable oxygen isotopes have received much attention (Feng et al., 2012). ^{18}O isotopes in rainfall have been shown to be inversely proportional to rainfall amount in some settings (Dansgaard, 1964; Moerman et al., 2014). From this knowledge, as well as the relatively high-resolution nature of speleothems, speleothems have recently been recognized as not only a general paleoclimate proxy source, but specifically as a source for paleotempestology studies (Frappier et al., 2007).

Calcite Growth

Growth Rate

The rate of calcite growth can change in temperate locations due to changes in temperature, changes in drip rate, changes in the saturation state of the water, changes in ventilation, or any combination of these. In some caves where temperature is relatively constant, growth rates are higher in the winter when there are cooler temperatures and substantial airflow in/out of caves and are lower to non-existent in the summer, when higher temperatures and little ventilation inhibit degassing and thus calcite growth (Banner et al., 2007). This is especially true in mid to high latitude caves, though cave geometry is a factor (James et al., 2015) and has been shown in central Texas caves including Inner Space Cavern, Natural Bridge Caverns, and Cave without a Name, which are used in this study (Banner et al., 2007). In contrast, shallow well-ventilated cave calcite growth rates are higher in the summer. The high summer growth is aided by higher temperatures and calcite's reverse solubility. That is, CO_2 gas is more soluble at lower temperatures, thus increasing the acidity of the water and lowering the apparent saturation of the $CaCO_3$ (Casteel and Banner, 2014). Thus, in deep temperate to subtropical caves there may be times in the summer months during which there is little to no calcite growth. This makes these deep cave speleothems a valuable source of information about the winter months, but may limit their use for events occurring during the summer months.

Growth patterns

It is generally accepted that some speleothems, especially those with a significant amount of growth per year, show growth layers of varying thicknesses and textures indicating periods of fast and slow calcite growth. Taking into account the seasonal variation of speleothem growth described earlier (Casteel and Banner, 2014), an idealized

temperate speleothem would show a pattern of thin, dense growth fabrics alternating with thicker, porous growth fabrics indicating periods of slower and faster growth, respectively. Again assuming significant annual growth, a pair of these growth bands could record time periods of a single year. Thicker, more porous growth bands tend to reflect faster growth and drip rates and thus potentially wetter conditions above the cave, whereas thinner, more compact growth bands tend to reflect slower growth and drip rates and thus may indicate dryer conditions above the cave (Muñoz-García et al., 2016). Thus, based on the growth rate pattern described in the section above, in an ideal temperate speleothem a single year would be indicated by a pair of growth bands- a thick porous band representing the high growth rate winter months, and a thinner more dense band representing low growth rate summer months. While many speleothems do not fit this idealized pattern and might have periods of no growth (Casteel and Banner, 2014), it provides a good first order approximation of age as well as general rainfall ratios between seasons and years, and was thus used in creating the hypothetical speleothem core presented later in this study .

Stable Oxygen Isotopes

In lower latitudes, rainfall amount and temperature can have a large impact on the $\delta^{18}O$ values of rainwater (Moreno et al., 2014). Thus, in some locations a seasonal variation in rainfall $\delta^{18}O$ values is present. The season with a greater number of or more intense rainfall events tends to have a more negative average $\delta^{18}O$ compared to the rainfall the rest of the year. This relationship between the $\delta^{18}O$ value of rainwater and rainfall amount is repeated on a variety of scales, ranging from several thousand years to within a single storm event, and is explained by a phenomenon known as the Rayleigh distillation model (Rozanski et al., 1993). In short, the more rain that has fallen from a given air mass, the

more isotopically light subsequent rain will be as the heavier isotopes are preferentially incorporated in the lowest energy phase- in this case, from the liquid rain rather than the vapor in the air mass. Thus, rainfall in a rainier season in a specific location generally has an overall isotopically lighter signature than a dry season, and this may be detected in the oxygen isotope ratios preserved in speleothem calcite as oxygen from the water entering the cave is incorporated in the formation of $CaCO_3$. Using the same logic, and all else being equal, rainwater from a longer lasting storm with more rainout will have a lighter oxygen isotope ratio than a brief storm as water molecules containing the heavier ^{18}O will preferentially rain out first, leading to the storm system slowly being depleted in ^{18}O compared to ^{16}O and resulting in isotopically lighter rainwater as the storm progresses. The isotope ratios of a storm not only decrease with time, but also with rainfall amount and inwards from the rainshield edge (Gedzelman et al., 2003) following the same Rayleigh distillation principle.

This raining out effect is especially noticeable in tropical storms such as hurricanes and cyclones. Tropical cyclones have been shown to have noticeably lower stable isotope ratios than other summer or tropical storm systems, with the isotopic ranges of the different storm types showing little to no overlap (Lawrence et al., 1996). This observation is explained not only by the large amount of rainfall that is produced by a hurricane, but also by the recycling of water within a hurricane system, leading to the rainfall becoming progressively isotopically lighter and lighter as it cycles through the hurricane system (Lawrence et al., 1996).

As a hurricane moves over land, precipitation associated with it becomes progressively lighter as recharge from seawater is no longer available. Overall, the $\delta^{18}O$ value of tropical cyclone precipitation is approximately 6‰ lighter than other summer precipitation, and more intense tropical cyclones are associated with lower $\delta^{18}O$ values

(Frappier et al., 2007; Pape et al., 2010). For example, drip water from Central Texas caves show an average $\delta^{18}O$ value of -4.1‰ over 10 years, and range from -5.9 to -1.1 ‰ during the same time period, with the most negative values associated with large rainfall events (Appendix A - Table A1). Thus, in the subtropics and some locations in the mid-latitudes, the pulse of isotopically light water that tropical cyclones leave behind acts as a natural tracer in the watershed and can infiltrate through the overburden and be recorded in caves by speleothem growth layers (Frappier et al., 2007) (Fig. 1.1). It is important to note that prolonged periods of above-average or below-average rainfall resulting from multiple rain events do not appear to have any influence on cave drip water oxygen isotope values as the amount effect is limited to water removed from a singular air mass (Jo et. al, 2010).

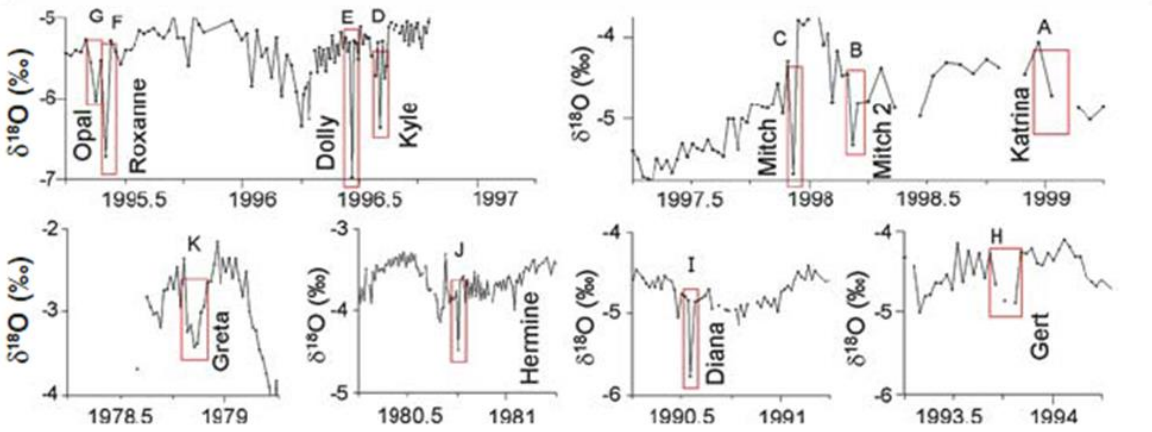

Fig. 1.1: Negative isotopic excursions in cave drip water from a cavern in Belize. Each negative excursion corresponding with a tropical storm event is highlighted and labeled. Notice the high resolution (data collected monthly or more frequently) required to identify these responses. Figure taken from Frappier et al. (2007).

While the $\delta^{18}O$ value of cave drip water is affected mainly by the $\delta^{18}O$ of precipitation at the surface, it is also affected by processes occurring in the epikarst above the cave (Moreno et al., 2014). The infiltration process dampens individual rainwater

isotopic signatures because mixing of new and older soil water occurs in the storage reservoirs within the soil and epikarst. The meteoric water from previous rainfall events is mixed in the epikarst. The dissolution of calcite (a more minor influence) and seepage water recycling via evapotranspiration (a major influence) can also act to mute, or even create if the stored water is highly altered by dissolution or evapotranspiration, anomalous isotopic signals in the drip water that reaches the cave (Wackerbarth et al, 2010). Thus, the longer the residence time of water in the soil and epikarst, the more muted individual extreme event signals will be, and the less likely it is to be reflected in the drip water entering the cave, let alone in the deposited calcite. A delay of several months between extreme events and the appearance of the associated water in a cave is also not unusual (Moerman et al., 2014). In addition, the appearance of an event's isotopic tracer, in terms of strength and timing, may vary not only between cave systems but even between drip sites and formations within the same cave due to differences in flow pathways.

Drip sites that are fed by more conduit/fracture type flows have shorter water residence times and are more likely to show $\delta^{18}O$ values that reflect discrete events. Sites that are fed by more diffuse/matrix type flow pathways, on the other hand, have longer water residence times and are more likely to show a more smoothed longer-term pattern of $\delta^{18}O$ variation (Moerman et al., 2014). Some degree of mixing and homogenization of water occurs regardless of whether the site is fed by a conduit or diffuse drip (Pape et al., 2010). Given this site-specific variation in $\delta^{18}O$ values even within the same cavern, a good understanding of the nature of each site as well as the local and regional climatology are necessary in order to understand $\delta^{18}O$ variations recorded in the calcite (Moreno et al., 2014).

Interpreting the $\delta^{18}O$ excursions in calcite is further complicated by the fact that the $\delta^{18}O$ signal recorded in the precipitated calcite is affected not only by $\delta^{18}O$ signal of the

drip water feeding it, but also by fractionation processes that occur prior to and during calcite precipitation (Moreno et al, 2014). Most speleothem $\delta^{18}O$ ratios are influenced by disequilibrium isotope fractionation rather than equilibrium processes, meaning that factors including drip rate and the degree of calcite supersaturation of the water can both impact the of the appearance of the event ^{18}O signal preserved in the calcite in addition to the $\delta^{18}O$ value of the drip water (Wackerbarth et al., 2010). Most sites, though this is especially impactful in sites with slow drip rate or higher calcite supersaturation, are impacted by disequilibrium fractionation as the heavier isotopes (^{18}O) are preferentially taken up in the calcite (Mickler et al., 2004; Wackerbarth et al., 2010). This, in turn, can make the correlation between the $\delta^{18}O$ values of the drip water and precipitated calcite smaller. Taking into account the described factors that can mute or imitate a climate-caused oxygen isotope anomaly, conduit-type sites are generally more likely to be useful in tracking extreme events as the isotopic signal of the event of interest is likely to be less dampened by mixing and fractionation processes. Thus, characterization of the conduit to diffuse nature of each study site was a key part of this study, with the response of more conduit-type sites interpreted as being more likely to be preserved in the calcite record.

It is important to note that isotopic fractionation during an individual extreme climatic event is not the only factor that could result in changes in drip water and calcite $\delta^{18}O$ values. Other events that result in changes in the $\delta^{18}O$ values in speleothems include seasonal changes, or changes in drip rate pattern (i.e. changes from a more conduit to a more diffuse type of flow, or vice versa, as calcite is dissolved or deposited or conditions above the cave change) (Wackerbarth et al., 2010). Thus, care needs to be taken to align $\delta^{18}O$ excursions with other paleo records and proxies. For example, identification of negative $\delta^{18}O$ excursions associated with tropical storms in speleothem calcite is assisted by the fact that tropical storms are unlikely to affect calcite $\delta^{13}C$ values, whereas variations

in the overlying epikarst, such as weathering or changes in flow path that alter the material the drip water flows through, may perturb both $\delta^{18}O$ and $\delta^{13}C$ values in calcite (Frappier et al., 2007).

Drip Rate

Cave drip sites are individual locations from which water enters the cave, as discernable individual drips, through the ceiling and drips some distance onto the cave floor. In many cases, these drip sites are marked by a stalactite- a cave calcite formation extending from the ceiling. In some cases, once the drip water reaches the ground, a stalagmite (a cave formation extending from the floor) is formed. The rate at which water enters the cave via these sites directly impacts the growth rate of formations within caves. Sites with higher average drip rates have a tendency to be faster growing than those with slower average drip rates (Muñoz-García et al., 2016). The drip rate variability associated with a site is also valuable as it can give indication about the flow pathway feeding the drip site. Sites with high drip rate variability are often construed as being sourced by conduit-type pathways. That is, water flowing through cracks in the limestone rather than through pore spaces. Conduit-type sites are interpreted as having short water-residence times in the epikarst above them, and thus little to no mixing of older stored water and recently infiltrated meteoric water (Smart and Friederich, 1986). Diffuse-type sites are the opposite, these are sites sourced by water than has slowly percolated through the limestone pore spaces before entering in the cave. Waters associated with these types of sites are often well-mixed and the drip sites themselves are characterized by slower, more consistent drip rates.

Understanding how water enters the cave is important when utilizing isotopes as a paleoclimate proxy. These isotopes, regardless of what they are, usually enter the cave via

being dissolved in water. In the case of tracking oxygen isotopes, they comprise the water itself. Drip rate gives an indication of how direct the connection is between a specific drip site in a cave and the surface, and thus provides an indication of how much of an influence individual events on the surface will impact a speleothem associated with that drip site.

GEOLOGIC SETTING

Regional Hydrogeologic Setting

All caves investigated are located within the Edwards Plateau, a karstified Cretaceous limestone region in central Texas (Musgrove and Banner, 2004) (Fig. 1.2a). This area includes the Edwards aquifer proper, and some sections of the Edwards-Trinity and Trinity aquifers (Fig. 1.2b). Tectonic activity in the late Cenozoic formed the Balcones Fault Zone, a series of high-angle normal faults that have partially or completely offset blocks of Edwards aquifer rocks, forming the confined and unconfined sections of the aquifer (Musgrove and Banner, 2004). Annual recharge to the Edwards aquifer varies dramatically depending on regional precipitation. Local climate is similar for all four studied caves in terms of precipitation. Central Texas is characterized by dry winters and summers, with relatively wet springs and autumns (Musgrove and Banner, 2004), and is classified as subhumid to semiarid, with varying extents of human land use, ranging from minimal to highly urbanized (Banner et al., 2007). Rainfall in the area is typically sourced from the Gulf of Mexico, with occasional contributions from the eastern Pacific Ocean and land-recycled water vapor (Feng et al, 2014). Average annual precipitation in the area is ~ 81cm/year (Pape et al, 2010). The area containing the studied caverns is generally covered in oak and juniper savannah (Banner et al., 2007).

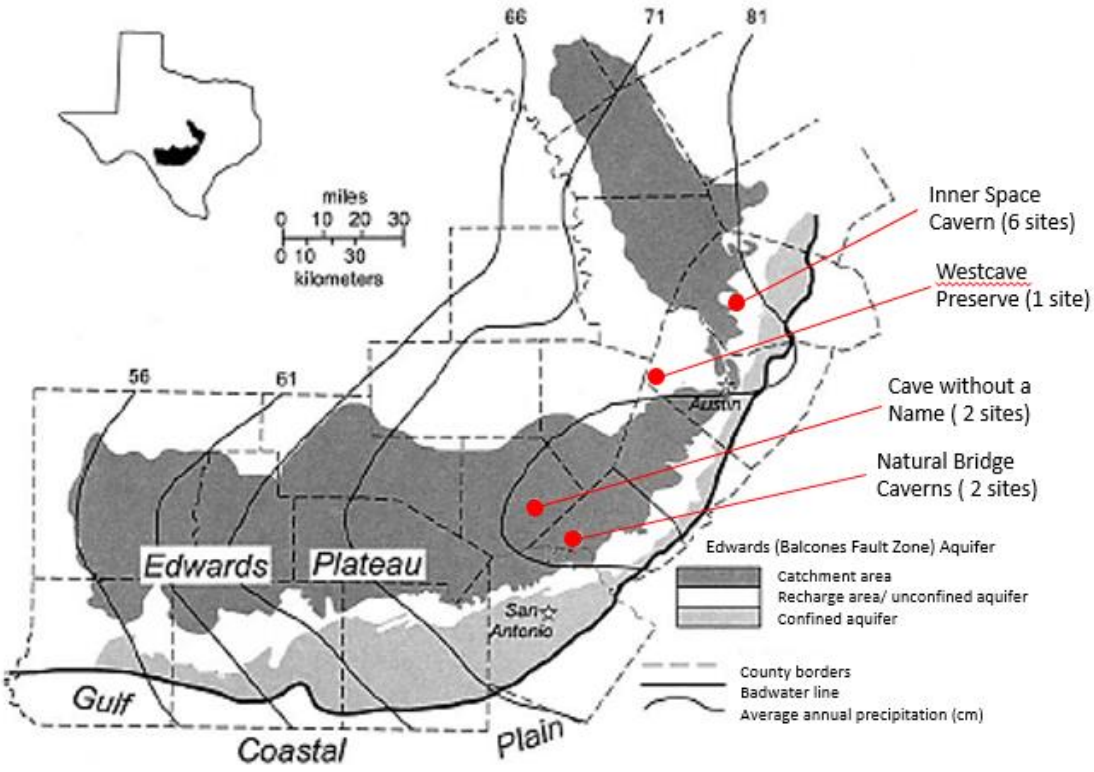
66
71
81
miles
0 10 20 30
0 10 30
kilometers
Inner Space
Cavern (6 sites)
Westcave
Preserve (1 site)
Cave without a
Name (2 sites)
Natural Bridge
Caverns (2 sites)
56
61
Austin
Edwards
Plateau
San
Antonio
Edwards (Balcones Fault Zone) Aquifer
Catchment area
Recharge area/ unconfined aquifer
Confined aquifer
County borders
Badwater line
Average annual precipitation (cm)
Gulf
Coastal
Plain

Fig. 1.2 a)

Fig. 1.2 b)

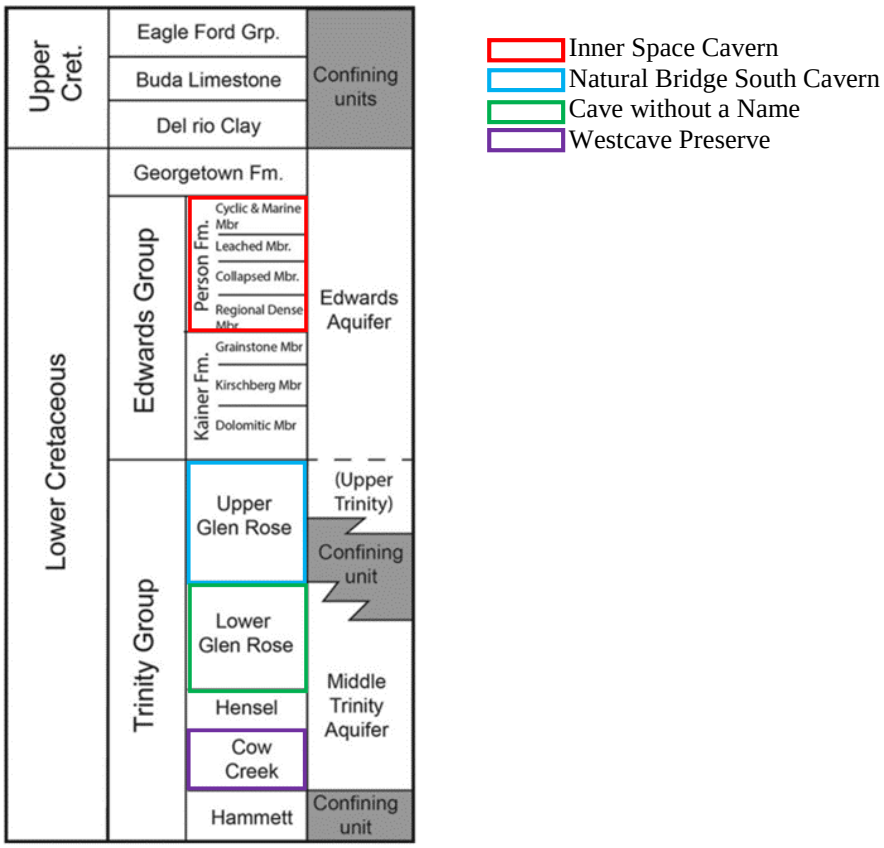

Fig. 1.2- a) Map of Texas showing the spatial relationship of the studied caves to one another. Figure modified from Musgrove and Banner (2004). b) Stratigraphic column of the Edwards-Trinity Aquifer. Locations of the caves studied are marked by colored boxes. Figure modified from Saribudak (2016).

Cave Settings

Inner Space Cavern

Inner Space Cavern is a deep (i.e. characterized by relatively stable cave air temperatures, as well as higher winter growth and lower summer growth) (Banner et al., 2007) tourist cave located near Georgetown, Texas (30.6079711, -97.6881177) (Appendix A - Fig. A1). The cave is overlain by silty and stony clays, and the cave itself is formed within the Edwards limestone group, specifically within the Person Formation, a Lower Cretaceous marine limestone interbedded with dolomite (Kastning, 1983; Cowan et al., 2013). The area is more urban than rural, with a major highway crossing over the cave. Data collection for this cave began May 1999.

Natural Bridge Caverns

Natural Bridge Caverns is a deep two- part (South Cavern and North Cavern) tourist cave located in New Braunfels, Texas (29.69334645,-98.3392661) (Appendix A - Fig. A2). The sites used in this study are located in the South Cavern, which is overlain by stony and gravely clay loam, and formed within the upper Glen Rose formation, which is an early Cretaceous interbedded limestone and dolomitic unit older than that of the Edwards Group (Kastning 1983; Musgrove and Banner, 2004) (Fig. 1.2b). Data collection for this cave began in May 2001.

Cave without a Name

Cave without a Name is a deep privately owned tourist cave consisting of a branched cave system with one major north-south oriented passage that splits into two smaller passages (29.8862965, -98.6197328) (Appendix A - Fig. A3). The sites used in this study are located at either end of this major passage. The cave is formed in lower Glen

Rose Limestone, which is a massive limestone with high porosity and permeability. (Cutler, 2016). Data collection for this cave began in June of 2013.

Westcave Preserve

Westcave is shallow (i.e. characterized by higher summer growth than winter growth and cave air temperatures equivalent with the surface air temperatures) (Carlson et al., 2018) cave located on land belonging to the non-profit Westcave Outdoor Discovery Center (30.3390623, -98.1409312) (Appendix A - Fig. A4). The cave is formed by a limestone overhang that has been enclosed by travertine walls, resulting in a well-ventilated small internal area with large entrances. The cave is formed in basal lower Cretaceous age Cow Creek Limestone and is situated below a spring-fed waterfall (Carlson et al., 2018). Data collection for this cave began in August 2009.

EXTREME CLIMATIC EVENTS IN CENTRAL TEXAS MONITORED IN THIS STUDY

2011: Historic Drought

The 2011 drought was a historically intense drought for much of the southern United States, with drought conditions extending from Arizona to North Carolina, as well as into Mexico (Neilson-Gammon, 2011). In Texas, the drought formally began with the record dry March of 2011, and continued throughout the end of 2011 (Neilson-Gammon, 2011). The following spring and summer months, while not historic, all ranked within the top ten driest months compared to historic rainfall during that month (Neilson-Gammon, 2011). However, rainfall totals varied across the state, though the drought condition persisted (Fig. 1.3). Georgetown (located near Inner Space Cavern) had a total of 16.84 in. of rainfall from January 1-December 31, 2011, New Braunfels (located near Natural Bridge Caverns) had a total of 22.12 in., Boerne (located near Cave without a Name) had a total

of 16.40 in., and Round Mountain (located near Westcave Preserve) had a total of 9.30 in (Rainfall data is from the National Oceanic and Atmospheric Administration, NOAA; Appendix A - Table A2). During non-event years (2010, 2012, 2013, 2014, 2015, and 2016) the average total rainfall from January 1- December 31, 2011, was 34.26 in. for Georgetown, 36.18 in. for New Braunfels, 38.89 in. for Boerne, and 29.57 in. for Round Mountain. In addition to historically low rainfall, average temperatures from June to August were over 1°C above the previous Texas record (Neilson-Gammon, 2011). For this study, the drought is defined as the period of time between which the Texas state average Palmer Drought Severity Index (PDSI) was -6 and below, specifically May-December of 2011 (National Climatic Data Center, NCDC, www7.ncdc.noaa.gov). PDSI values factor in both temperature and rainfall and range from -10 (extremely dry) to +10 (extremely wet). The National Center for Atmospheric Research (NCAR) has defined severe droughts as those with a PDSI value of -3 or less.

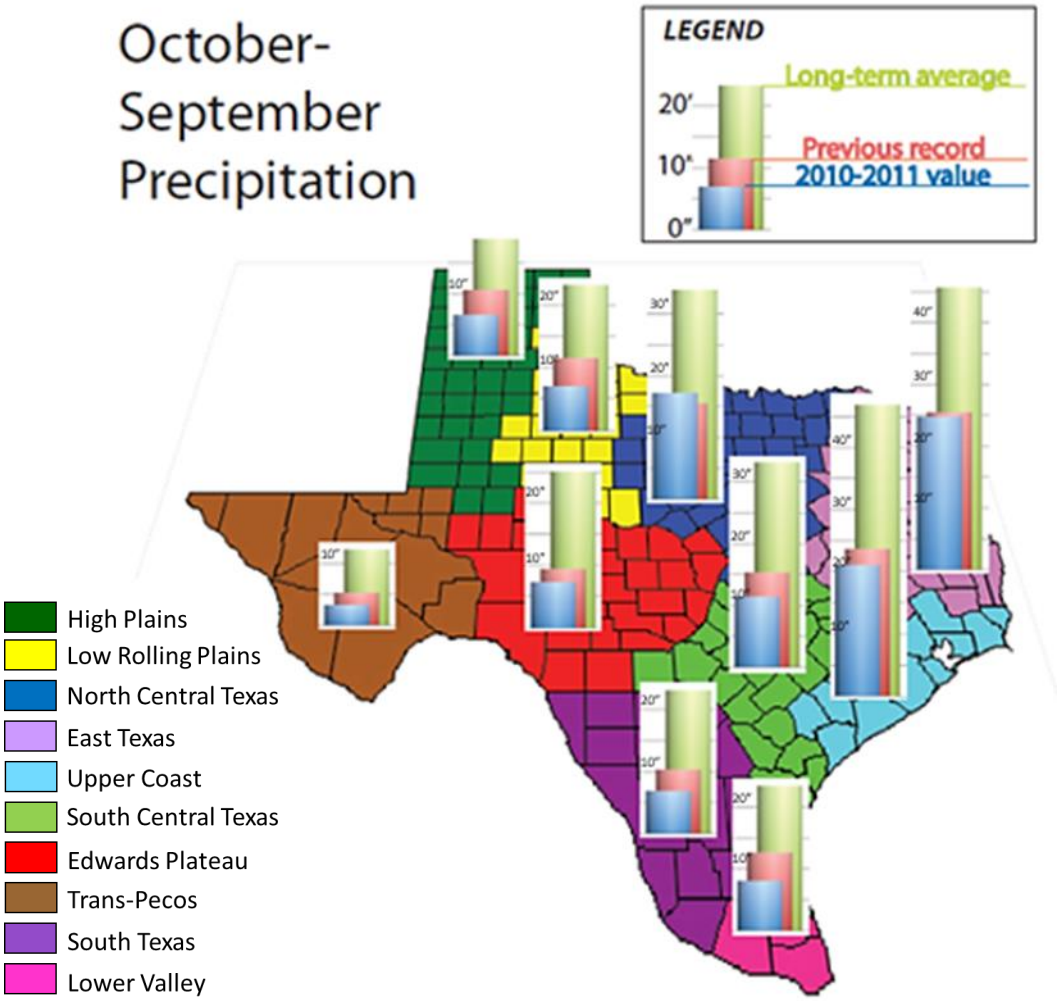

Fig. 1.3- Relative average annual total rainfall amounts, by climate divisions, in Texas during the 2011 drought as compared to the previous driest year and the long-term average. Figure modified from Nielson-Gammon (2011)

2017: Hurricane Harvey

Hurricane Harvey hit the east coast of Texas as a Category 4 hurricane on August 25, 2017, making landfall around 10:00 pm in the Rockport/Fulton area, and continuing to affect the area until August 29, 2017 (Fig. 1.4) (National Weather Service, 2017). The first major hurricane to make landfall along the east Texas coast since Hurricane Celia in 1970, Hurricane Harvey had a maximum recorded wind speed of 145 mph at the Aransas County

airport, storm surges of up to 12 feet above ground level at the Aransas Wildlife Refuge, and resulted in record-breaking rainfalls across southeast Texas (National Weather Service, 2017). The National Hurricane Center (2017) reports $125 billion worth of damage as a direct result of Hurricane Harvey winds, storm surges, and flooding (Table 1.1). The caves used in this study are outside the main path of the hurricane and the main path of high rainfall. According to NOAA, the Inner Space Cavern area received 3.94 in., the Natural Bridge Caverns area received 4.74 in., the Cave without a Name area received 1.19 in., and the Westcave area received 4.29 in. of rain (Fig. 1.4) associated with Hurricane Harvey (Appendix A - Table A2) (NOAA, www.ncdc.noaa.gov).

Table 1.1: Comparison of daily average rainfall for the extreme events in this study across the four caves, with daily average rainfall during the same time period (i.e. May-December) of non-event years (2010, 2012, 2013, 2014, 2015, 2016), along with damage associated with each event.

Event	Duration	Daily Average Rainfall for event (in.)	Average PDSI for event	Daily Average Rainfall of non-event years (in.)	Damage (billions of dollars)
2011 Drought	May-December	0.05	-6.95	0.10	$8 [1]
2017 Hurricane Harvey	Aug. 25-Aug. 29	0.70	2.47	0.03	$125 [2]
2018 Wet Autumn	Sept-November	0.24	2.80	0.11	Over $3 [3]

[1] Bolhassani (2014).

[2] National Hurricane Center (2018).

[3] Based on 2015 flooding, Baddour (2015).

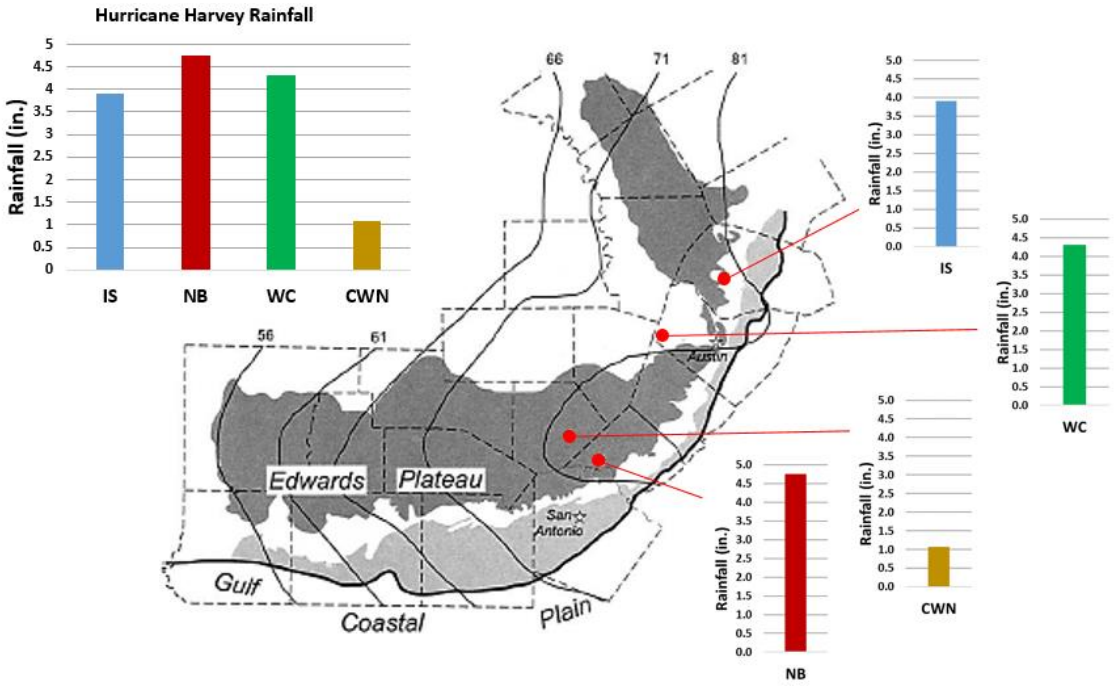

Fig. 1.4: Rainfall associated with Hurricane Harvey (August 25-29, 2017). Figure modified from Musgrove and Banner (2004)

Like most hurricanes, Hurricane Harvey rainfall exhibited a distinctly low oxygen isotope signature (Fig. 1.5). These low values for rainfall in hurricanes are attributed to Rayleigh distillation and water recycling (Lawrence et al., 1996). As mentioned previously, the $\delta^{18}O$ value of tropical cyclone precipitation is approximately 6‰ lighter than other summer precipitation, and more intense tropical cyclones have lower $\delta^{18}O$ values (Frappier et al., 2007). In comparison, the lightest water associated with Hurricane Harvey has a value of -13.3‰, which is approximately 9.5‰ lower than the average summer (May-August) value of Austin rainfall, -3.8‰ (Table 1.2).

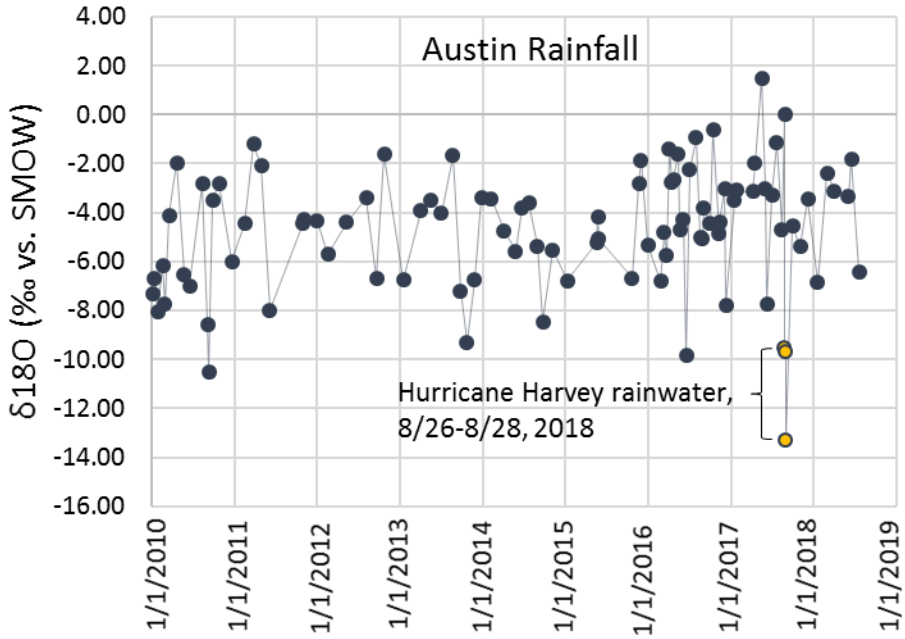

Fig. 1.5: Austin rainfall $\delta^{18}O$ values, January 2010 through December 2018, based on water collected at the Jackson Geology Building, Austin, TX. Hurricane Harvey is indicated.

Table 1.2: Austin rainfall $\delta^{18}O$ values, January 2010 through December 2018. The dates listed at the mid dates of the time period over which rainwater was collected at the Jackson Geology Building, Austin, TX. Hurricane Harvey is indicated.

Mid date	δ18O(‰)
1/10/2010	-7.32
1/15/2010	-6.68
1/27/2010	-8.04
2/21/2010	-6.19
2/28/2010	-7.72
3/20/2010	-4.10
4/22/2010	-1.96
5/23/2010	-6.53
6/18/2010	-6.99
8/15/2010	-2.84
9/6/2010	-8.57
9/12/2010	-10.51
9/29/2010	-3.48
10/26/2010	-2.80
12/21/2010	-6.01
2/16/2011	-4.45
3/28/2011	-1.20
5/2/2011	-2.10
6/6/2011	-8.00
11/1/2011	-4.42
11/4/2011	-4.30
1/2/2012	-4.35
2/17/2012	-5.70
5/10/2012	-4.40
8/6/2012	-3.41
9/20/2012	-6.69
10/23/2012	-1.63
1/17/2013	-6.76
4/2/2013	-3.93
5/18/2013	-3.52
7/3/2013	-4.04
8/21/2013	-1.69
9/25/2013	-7.21
10/24/2013	-9.30
11/24/2013	-6.73
12/28/2013	-3.41
2/7/2014	-3.42
4/4/2014	-4.73
5/24/2014	-5.58
6/23/2014	-3.81
7/22/2014	-3.60
8/28/2014	-5.36
9/24/2014	-8.46
11/5/2014	-5.53
1/9/2015	-6.78
5/20/2015	-5.24
5/24/2015	-4.17
5/26/2015	-5.09
10/21/2015	-6.68
11/20/2015	-2.80
11/30/2015	-1.85
12/29/2015	-5.32
2/25/2016	-6.82
3/10/2016	-4.82
3/22/2016	-5.76
4/1/2016	-1.39
4/14/2016	-2.78
4/21/2016	-2.64
5/12/2016	-1.61
5/19/2016	-4.69
6/3/2016	-4.30
6/16/2016	-9.86
7/1/2016	-2.26
7/28/2016	-0.94
8/17/2016	-5.02
8/25/2016	-5.08
9/2/2016	-3.82
9/30/2016	-4.43
10/14/2016	-0.63
11/8/2016	-4.84
11/11/2016	-4.40
12/2/2016	-3.04
12/9/2016	-7.77
1/14/2017	-3.51
1/23/2017	-3.10
4/7/2017	-3.13
4/14/2017	-1.99
5/15/2017	1.48
5/30/2017	-3.02
6/8/2017	-7.72
6/29/2017	-3.29
7/19/2017	-1.14
8/11/2017	-4.68
8/25/2017	0.03
8/26/2017	-9.56
8/27/2017	-9.70
8/28/2017	-13.33
9/27/2017	-4.54
10/31/2017	-5.41
12/5/2017	-3.47
1/17/2018	-6.85
2/28/2018	-2.39
3/30/2018	-3.12
5/31/2018	-3.36
6/14/2018	-1.80
7/18/2018	-6.41

2018: Historically Wet Autumn

The autumn months of 2018, September through November, had historically high rainfall for the state of Texas. September of 2018 is the fourth wettest month statewide on record with an average of 6.77 in. of rainfall statewide. October of the same year had over 7 in. of rain on average, making it the second wettest month on record in Texas. Together, September and October combined to make them the wettest two month period on record (https://www.ncdc.noaa.gov/sotc/national/201810). The combined autumn months were the wettest on average over the duration of this study (Table 1.3). Given the large amounts of rainfall during this time period, it is possible that a rainfall, and thus drip water, isotopic decrease could be present, due to the rain-out effect. The presence of such an isotopic response, however, would depend on the amount of rain that fell from each individual weather system that comprised the wet autumn. If such an isotopic response exits, this longer term (i.e., 3 month) input may be more evident in the speleothem record than the short-term input of Hurricane Harvey

Table 1.3: Observed rainfall in the locations of the studied caves September through November of 2010-2018, and the average rainfall region-wide. The abnormally wet fall of 2018 is highlighted. Rainfall data courtesy of NOAA (www.ncdc.noaa.gov).

	Total rainfall in Inches (Sept.-Nov.)					
	Georgetown	New Braunfels	Boerne	Round Mountain		Average
2010	8.76	8.00	12.65	5.25		8.67
2011	4.46	8.67	9.23	4.23		6.65
2012	6.04	5.95	10.54	7.27		7.45
2013	13.39	11.96	13.72	20.55		14.91
2014	10.86	11.48	12.75	8.53		10.91
2015	17.29	13.90	14.26	10.10		13.89
2016	3.93	8.14	5.80	8.60		6.62
2017	3.98	4.09	4.88	3.24		4.05
2018	19.11	18.16	23.73	26.97		21.99

Chapter Two: Methods

SAMPLE COLLECTION

Drip water samples from several sites in Inner Space Cavern in Georgetown, Texas, Natural Bridge Caverns in New Braunfels, Texas, Westcave Preserve, Round Mountain, Texas, and Cave Without a Name, Boerne, Texas, have been collected at least every 4-6 weeks for up to twenty years in some cases, and continue to be collected. As a result, there is an extensive database showing the relationship of drip rate at these sites, the oxygen isotope values of the drip water, and local rainfall events. At Inner Space Cavern, sampling intervals were changed to once every two weeks immediately post Hurricane Harvey to assess the drip site responses at relatively high resolution. This higher rate of sampling continued through October, 2017. Artificial glass substrates placed beneath some drip sites for calcite precipitation collection have been collected and replaced on a monthly basis over much of the same 20 year study period. These plates were placed at Inner Space Lake of the Moon Rear (ISLM Rear), Inner Space Stone of Time Rear (ISST Rear), Inner Space Squid Room 3 (ISSR3), Inner Space Squid Room 7 (ISSR7), Natural Bridge Wellshaft (NBWS), Cave without a Name Brain Dead (CWNBD), Cave without a Name Hole of Wisdom (CWNHoW), and Westcave 3 (WC-3). These records provide insight into potential speleothem growth rates and the patterns of growth shown by speleothems in these caves. For a more detailed description of sample collection methodology, see Casteel and Banner (2014).

Drip rates for each of these sites have been analyzed compared to rainfall events. Analysis of samples for the expected isotopic excursion will focus around drip rate peaks associated with rainfall from each extreme event and are supplemented with historical data as available. Rainfall data was used from NOAA. Rainfall oxygen isotope values were

mainly the result of analysis of rainwater collected every 4-6 weeks on the roof of the Jackson Geology Building, Austin, TX.

Water Samples

Drip water samples were collected every 4-6 weeks from multiple sites within each of the four caves, with, when possible, separate sampling bottles for oxygen isotope, hydrogen isotope, strontium isotope, cation, anion, and alkalinity analyses. Samples for analyzing oxygen isotopes were collected first, and as a result whenever there was drip water an oxygen isotope sample (5 mL) was collected. Each oxygen isotope sample bottle was stored, without headspace, in a 5 mL glass vial, sealed with Parafilm, and refrigerated until analyzed.

Rainwater samples were collected in a glass vessel, via a funnel, on the Jackson Geology Building roof, with a layer of mineral oil within the vessel limiting evaporation of the collected water. Every 4-6 weeks the vessel was replaced, and the rainwater accumulated in it over the past weeks filtered twice through coarse filter paper to remove any mineral oil, divided into up to four 10 mL glass vials, labeled with the deployed and collection dates, sealed with Parafilm and refrigerated until sampled for analysis (Jones et al., 2000). In addition, rainfall associated with Hurricane Harvey was collected at up to hourly intervals throughout the duration of the hurricane in the San Antonio (a residence) and Austin areas (a residence and the roof of the Jackson Geology Building, University of Texas at Austin) by L. Tian and J. Banner, respectively. Storage and isotope analysis methods were the same as the other rainwater samples, though the use of mineral oil was absent as the water was collected immediately. Rainfall amounts are from the datasets of NOAA (www.ncdc.noaa.gov, Appendix A - Table A2). Rainfall amounts are unique to each cave location. Georgetown was used to estimate rainfall for Inner Space Cavern

(approximately 30 km from the Jackson Geology Building), New Braunfels for Natural Bridge Caverns (80 km), Round Mountain for Westcave (60 km), and Boerne for Cave without a Name (110 km). Though each of these rainfall locations varies in distance from the rainfall isotope collection site, it was assumed that any affect distance had on isotopic values was minimal based on the variation of isotopic patterns in global precipitation (Rozanski et al., 1992).

Drip rate was measured as either drops per minute or milliliters per minute, depending on the speed of the drip. Drip rate measured by counting drops per minute is determined by averaging three measurements of the time taken for three drops to fall. Drip rate measured by milliliters collected per minute was determined by averaging three measurements of the time for 10 mL of drip water to be collected. All measurements have been converted to mL/min (Appendix B - Table B1), assuming that one drop is approximately equivalent to 0.1 mL.

Calcite Samples

Between drip water collection visits to each cave, 10 x 10 cm glass plates, were left underneath the sites drip water was collected from, with the drip hitting the center of the plate and the plate serving as an artificial growth substrate. Each plate was sanded on the upper side and etched with a unique identifier number on the lower side and of known weight. These plates were collected and replaced at each sample collection visit, rinsed with distilled water, dried in a laminar flow hood, and then re-weighed to determine the weight of calcite growth. Plates are stored in CD cases.

SITE SELECTION

Of 25 active sites that have been included in long-term data collection in the four studied caves, 11 were selected for detailed study. These sites were selected based on completeness of data, including drip water oxygen isotope ratios (Appendix A - Table A1), drip rate (Appendix B - Table B1), and calcite growth rate (Appendix B - Table B2) for the study period. Nonetheless, not all sites have complete data available for the study period (2010-2018). The 11 selected sites cover the full range of drip site characterization, from conduit to diffuse-type drips, with an approximately equal number of each classification (Fig. 2.1). The selected sites are considered to be representative of the range of responses to each extreme event as the sites not used in this study are generally very similar to the chosen sites in terms of coefficient of variability vs. maximum drip rate. The conduit, intermediate, and diffuse boundaries were chosen depending on where sites fall on the coefficient of variability vs. maximum drip rate diagram (Fig. 2.1).These classifications are based on the characteristics of physical flow paths, where the highly variable sites with high drip rates are considered to be conduit-dominated drip sites (Guilfoyle, 2006). For diffuse, the coefficient of variability (CoV) is less than one and the maximum drip rate is less than 5 mL/min. For conduit the CoV is greater than 1.5 and the maximum drip rate is greater than 250 mL/min. Intermediate are sites between these parameters. ISLM Rear, CWNHoW, CWNBD, and ISSR7 are all defined as primarily diffuse. ISST Rear, ISSR5, NBFE, and ISSR3 are defined as intermediate. ISHW, NBWS, and WC-3 are defined as primarily conduit (Fig. 2.1).

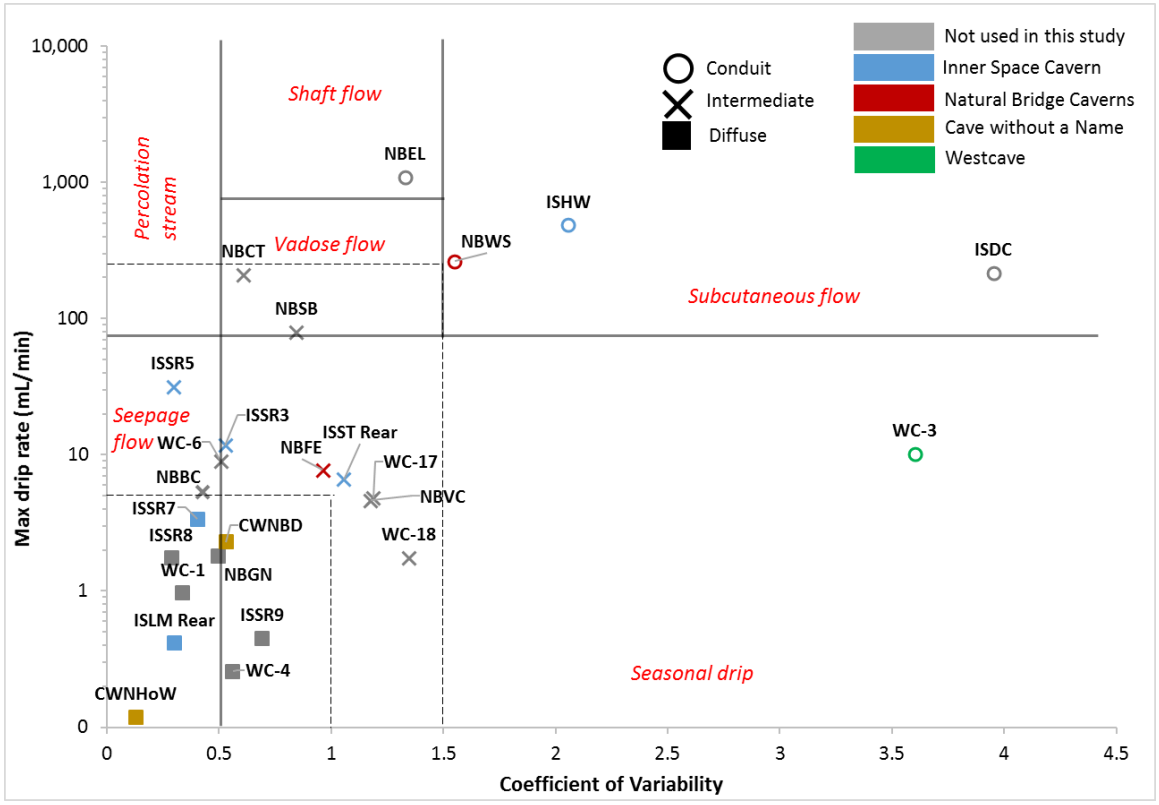

Fig. 2.1: The coefficient of variability (coefficient of variation=standard deviation/average) versus maximum mL/min drip rate for all active sites, as well as their flow path classifications used in this study. Sites used in this study are colored according to cave, all other sites are grey. Overlain are the divisions for flow regimes defined by Surić et al, 2017 (solid lines), and the divisions used in this study (dashed lines). Classification developed by Smart and Friedrich (1986).

Inner Space Cavern Sites

Sites selected in Inner Space cavern are the sites known as Inner Space Hallway (hereafter referred to as ISHW), Inner Space Stone of Time Rear (ISST Rear), Inner Space Lake of the Moon Rear (ISLM Rear), Inner Space Squid Room 3 (ISSR3), and Inner Space Squid Room 5 (ISSR5) (Appendix B - Fig. B1). ISHW drips from a 2 cm stalactite dripping approximately 1 m onto cave floor substrate. ISST Rear is located at the rear of a large flowstone, with water running from the cave ceiling down the flow stone and then

dripping approximately 20 cm onto a small fried egg structure. ISLM drips from a 2 cm stalactite dripping approximately 1.5 m onto cave floor substrate. ISSR3 drips from an approximately 10 cm stalactite, dripping approximately 3 m onto a 1m stalagmite. ISSR5 drips from an approximately 5 cm stalactite, dripping about 3.5 m onto cave floor substrate (Table 2.1).

In addition to long-term (1999-2019) drip water sampling, each of these sites, with the exception of ISSR7, also had high-resolution data collection immediately following Hurricane Harvey- every two weeks from late August to mid-October 2017. The ISST Rear, ISLM, ISSR7, and ISSR3 stalagmites also have longer-term monthly growth rate data from artificial glass substrate analyses.

Natural Bridge Sites

Sites selected in Natural Bridge Caverns are known as Natural Bridge Wellshaft (NBWS) and Natural Bridge Fried Egg (NBFE) (Appendix B - Fig. B2). Both sites are located in the south cavern, and have had continuous long-term drip water sampling every 4-6 weeks for up to 20 years (1999-2019). These sites were selected because of this long-term sampling, as well as their ease of access and continuity of flow. NBWS also has growth rate data. NBWS is a 15cm stalactite fed by a fracture, dripping approximately 3 m onto a 3 m stalagmite. The NBWS stalagmite also has long-term growth-rate data from calcite growth onto an artificial glass substrate. NBFE is a 15 cm soda straw dripping approximately 4m onto a large fried egg structure that is part of a larger flowstone (Table 2.1).

Cave without a Name Sites

Sites selected in Cave without a Name are Cave without a Name Braindead (CWNBD) and Cave without a Name Hole of Wisdom (CWNHoW) (Appendix B - Fig. B3). Both sides have long-term continuous drip water sampling every 4-6 weeks for up to 6 years (2013-2019). No other sites are sampled in Cave without a Name, so despite their lack of 2011 data they were included in this study. CWNBD is a 3 cm stalactite dripping approximately 1m onto a 30 cm diameter flowstone structure. CWNHoW is an approximately 10 cm stalactite dripping approximately 4 m onto a 1 m composite stalagmite (Table 2.1). The stalagmites of both sites have growth rate data from calcite growth onto artificial glass substrates.

Westcave Site

The site selected from Westcave is Westcave-3 (WC-3) (Appendix B - Fig. B4). This site has long-term continuous drip water, cave air temperature, and cave air carbon dioxide sampling every 4-6 weeks for 6 years (2013-2019). WC-3 is a 10 cm stalactite dripping approximately 1.25 m onto a small fried egg structure on the cave floor substrate. The fried egg structure has growth rate data from calcite growth onto artificial glass substrates. This site was mainly selected as a shallow cave site to act as a comparison against the other 10 deep cave sites.

Table 2.1: Summary of the sites used in this study, including the first published reference of each. "Y" indicates that data points of that measurement do exist, "N" indicates that there is no data for this measurement.

Site	Stalactite length (cm)	Drip Height (cm)	Described by	Classification	Drip rate	δ18O	Growth rate
ISHW	2	100	Banner et al., 2007	Conduit	Y	Y	N
ISST Rear	0	20	Pape et al., 2010	Intermediate	Y	Y	Y
ISLM Rear	2	150	Banner et al., 2007	Diffuse	Y	Y	Y
ISSR3	10	300	Meyer et al., 2014	Intermediate	Y	Y	Y
ISSR5	5	350	Meyer et al., 2014	Intermediate	Y	Y	N
NBWS	15	300	Banner et al., 2007	Conduit	Y	Y	Y
NBFE	15	400	Pape et al., 2010	Intermediate	Y	Y	N
CWNBD	3	100	Cutler, 2016	Diffuse	Y	Y	Y
CWNHoW	10	400	Cutler, 2016	Diffuse	Y	Y	Y
WC-3	10	125	Feng et al., 2014	Conduit	Y	Y	Y

ISOTOPE ANALYSIS

Stable Oxygen Isotope Analyses

For each sample, either of rainwater or drip water, 2 mL of water is equilibrated in septum-capped vials at 25 °C with CO_2 mixed at 3000 ppm in He. Headspace CO_2 equilibrated with the water samples was carried through a Gasbench II and into a Thermo Scientific 253 Isotope Ratio Mass Spectrometer at the Department of Geological Sciences, Austin, TX. The $\delta^{18}O$ values of unknowns were calibrated to the Standard Mean Ocean Water (SMOW) scale using 3 internal laboratory standards that were themselves calibrated to the SMOW scale by assigning Standard Light Antarctic Precipitation (SLAP) of $\delta^{18}O$ of -55.‰. The $\delta^{18}O$ values of standards were reproducible within 0.1‰.

Hydrogen

Selected drip water samples (collected May to December 2017) from ISHW, ISLM Rear, and ISSR3, as well as Austin rainwater were analyzed for hydrogen isotopes. The hydrogen isotope compositions of a few microliters of water from1 mL of each water sample, as well as three internal standards calibrated to SMOW, was measured via reduction to H_2 with a thermal conversion elemental analyzer, followed by analysis of the H_2 using the isotope ratio mass spectrometer at the Department of Geological Sciences, University of Texas at Austin. Measured δD values of unknowns were normalized to the SMOW scale by comparison with internal standards which were calibrated to the SMOW scale by assigning SLAP a δD value of -428‰. The δD values of standards were reproducible within 2‰.

MODELS

Drip Water Residence Time Model

To determine the approximate residence time of drip water in the epikarst for each site, drip water was modeled using a simple recharge model where all drip water is from a single reservoir of unchanged (i.e. has not undergone any water-rock interaction or been subject to evaporation) percolating precipitation. The effect of different mixing rates was simulated by use of a backward projected amount-weighted running mean of Austin, TX, rainfall $\delta^{18}O$, similar to Moerman et al. (2014), over the previous ”n” months. Mixing of meteoric water in the epikarst is modeled by multiplying the $\delta^{18}O$ value of rainwater collected over a specific time period by the amount of rainfall during that same time period to give a weighted value. These weighted values were then summed and divided by total rainfall over the designated period of time. Each site was compared to a 6, 12, 18, 24, and 48 month weighted running mean model (Appendix B - Tables B4, B5, B6, and B7). The

model that best fit the measured drip water $\delta^{18}O$ values from January 2017- April 2018, based on visual analysis of the plots (Fig. 3.7) and the root mean square error, was selected as the approximate residence time of water above that particular site. This time period was selected for analysis because the isotopic signature of Hurricane Harvey in August 2017 acts as a unique natural tracer. Unlike the model used by Moerman et al. (2014), daily rainfall $\delta^{18}O$ values were not used as rainwater was generally collected every 4-6 weeks. Thus, the isotope values are the average $\delta^{18}O$ values of rainfall precipitated over that time period. As the model uses a weighted mean, the effect of using averaged $\delta^{18}O$ values is assumed to be minimal. Each point in the model was plotted on the mid date between the date the rainwater began to be collected and the date the collection ended.

Conceptual Speleothem Model

An idealized deep cave (i.e. stable (±0.5°C) cave air temperature and drip water temperature year-round) speleothem model was created to simulate how each extreme event could be expected to be preserved in the speleothem calcite record, similar to the model developed by Wong et al. (2011). Four years were modeled- an "average" year, a year of drought, a year containing a late summer hurricane, and a year containing an autumn with greater than average rainfall. Rainfall for each of these hypothetical years was created using the averages of the daily rainfall values from the areas used in this study- Georgetown, Round Mountain, New Braunfels, and Boerne (Appendix A - Table A2). The average year was created using rainfall from 2010, 2012, 2013, 2014, 2015, and 2016. None of the studied extreme events took place during these years. The drought year was created using rainfall from 2011, the hurricane year using rainfall from 2017, and the wet autumn year using rainfall from 2018 (Appendix B - Table B8).

The idealized drip water isotopic response correlated to each of these modeled years was created using a) monthly averages of drip water $\delta^{18}O$ collected from the deep caves used in this study (Inner Space Cavern, Natural Bridge Cavern, and Cave without a Name), plotted each month to smooth out the data, and/or b) the isotopic values, again one per month, of the deep cave site(s) with the most dramatic response to an individual event. For example, given the marked response of NBWS to Hurricane Harvey, the data collected from NBWS for August, September, October, and November were the values used to model the response to a later-summer hurricane. The Microsoft Excel curved-line function was used to interpolate between plotted points. Yearly average drip water $\delta^{18}O$ values were also plotted for comparison.

Assuming a constant drip water temperature of 20°C, based on measured water temperatures across the study period and sites, the expected $\delta^{18}O$ value of calcite precipitated from the drip water with the modeled $\delta^{18}O$ was estimated using the equation (Eqn. 1) found in Wackerbarth et al. (2010) where T is the temperature of the drip water in Kelvin (Appendix B - Table B9). This equation assumes equilibrium between the calcite and the water, and though this may not be correct it serves as good first-order approximation. Periods of slow or no growth, based on findings by Banner et al. (2007) are set as mid-June through the end of August each year. These periods were then extended/reduced for each extreme climatic event as results from this study warranted.

$$\delta^{18}O_{calcite} = \left(\frac{(\delta^{18}O_{drip\ water}+1000)}{1.03086} * \frac{e^{(2780/T^2-2.89)}}{1000}\right) - 1000 \qquad \text{(Eqn. 1)}$$

From this, a hypothetical speleothem was created, with a period of high/limited growth for each year as results indicated. If no growth rate change was associated with the event, then the period of slow growth was assumed to be mid-June through the end of August. The calculated calcite $\delta^{18}O$ values associated with periods of growth, and thus

recorded in the speleothem, was then overlain on the modeled speleothem. The result is an idealized, deep cave, temperate speleothem and how it would record extreme events, including a drought, a hurricane, and a wet season. The amount of growth presented in the modeled speleothem is only relative, as the exact amount of growth varies between sites.

Chapter Three: Results

DRIP RATE PATTERNS OVER EXTREME EVENTS

2011: Historic Drought

From examining the time series of drip rates for each site (Fig, 3.1), some drip rate trends in response to the 2011 drought are apparent (red bar in Fig. 3.1, Appendix B – Table B1). Site ISST Rear shows a year-long low drip-rate period with a notable increase as the drought ends. Sites ISLM Rear, NBFE, and NBWS show a year-long low drip-rate period with a notable increase as the drought ends. ISSR3 and ISSR5 show a year-long low drip-rate period, reaching historically low rates for the study period, with a notable increase as the drought ends. ISHW shows a year-long low drip-rate period with a slight increase as the drought ends. ISSR7 shows a notable increase in drip rate throughout the drought. WC-3 has no obvious drip rate response to the drought.

Comparing the average drip rate values of each site during years with no extreme event with the average drip rate from January-December 2011, the drought average drip rates of both ISLM rear and ISSR5 is greater than one standard deviation outside of the non-extreme-event years (Appendix C - Table C1).. As drip rate is related to growth rate (Muñoz-García et al., 2016), it is possible that the year-long drought could be recorded in a speleothem as a longer-than average period of slow growth.

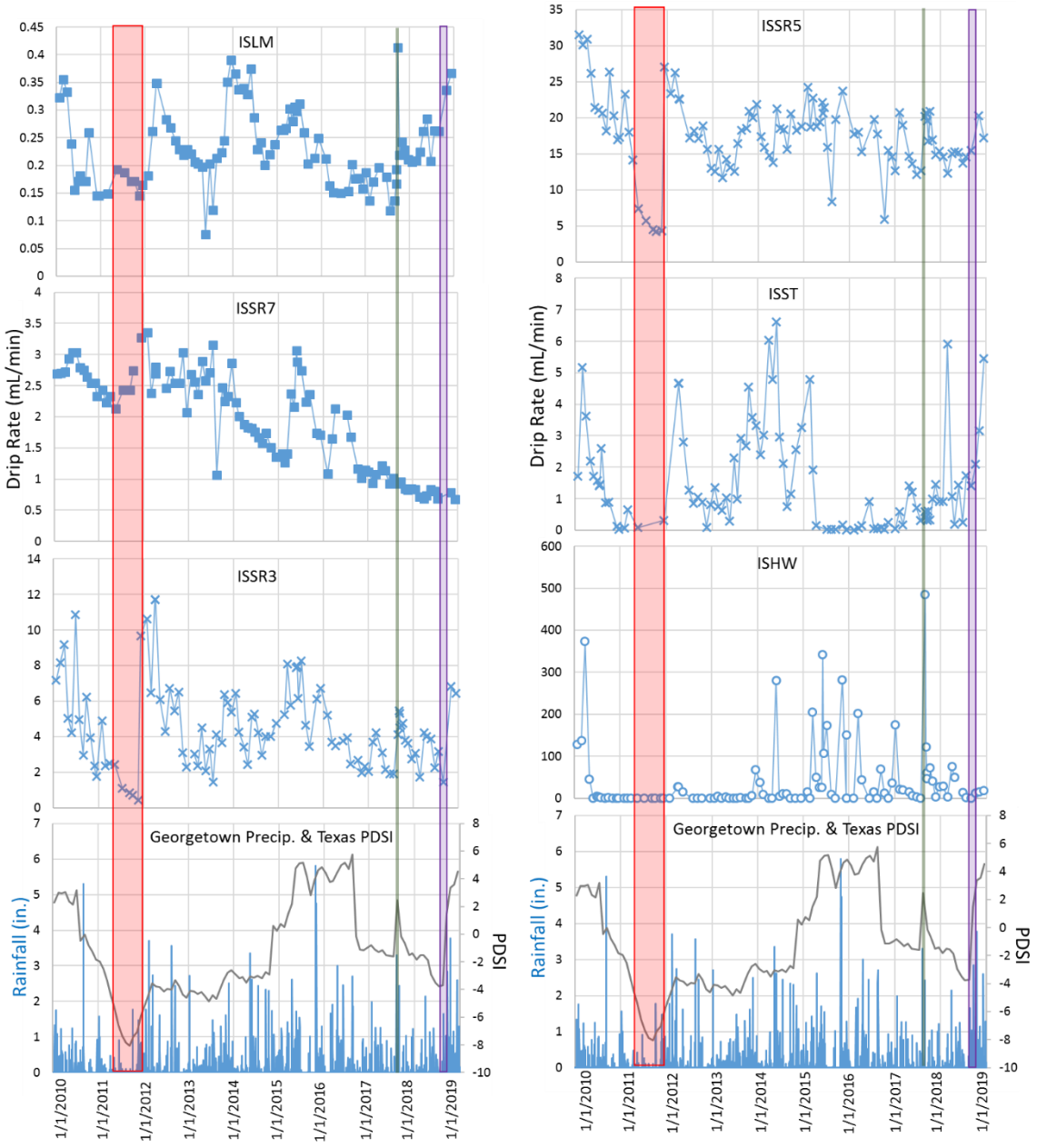

Fig. 3.1 a) Inner Space Cavern

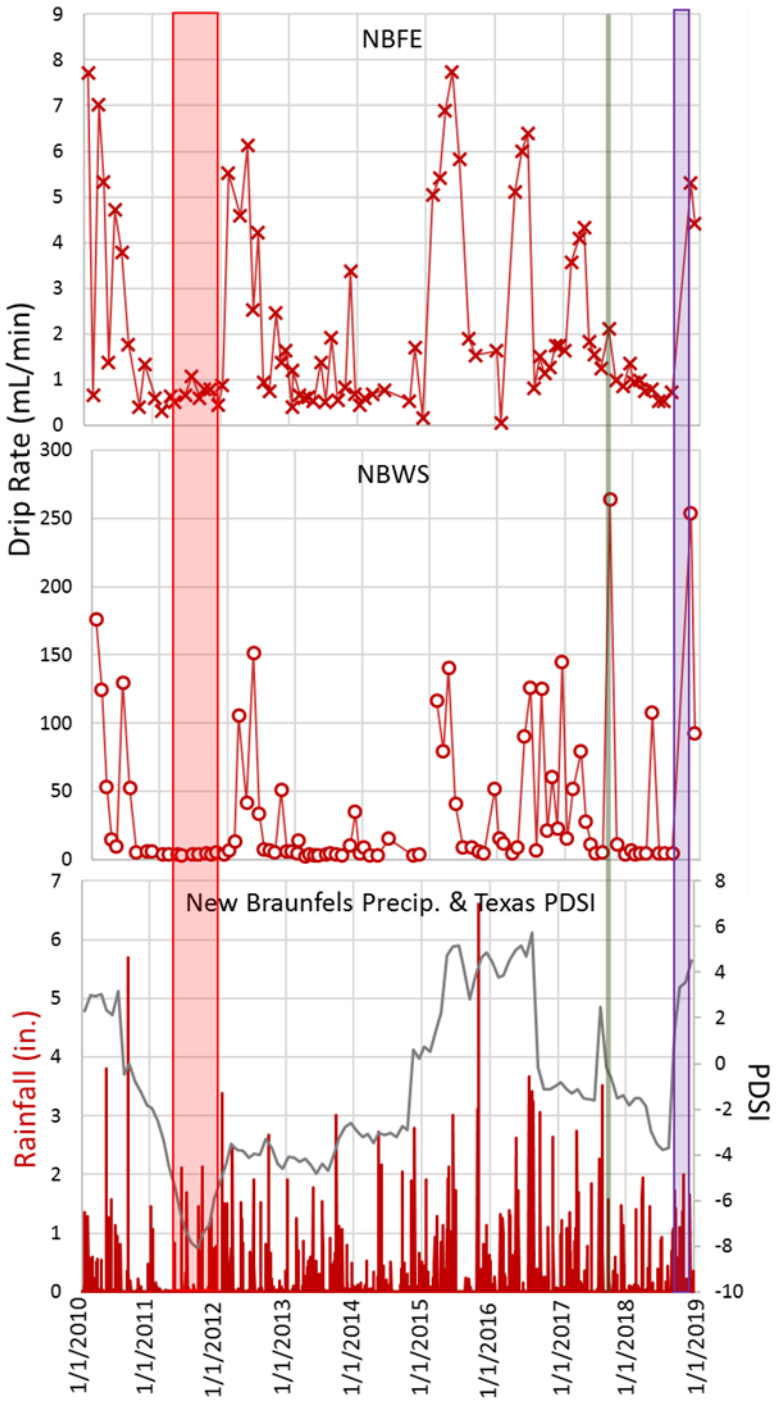

Fig. 3.1 b) Natural Bridge Caverns

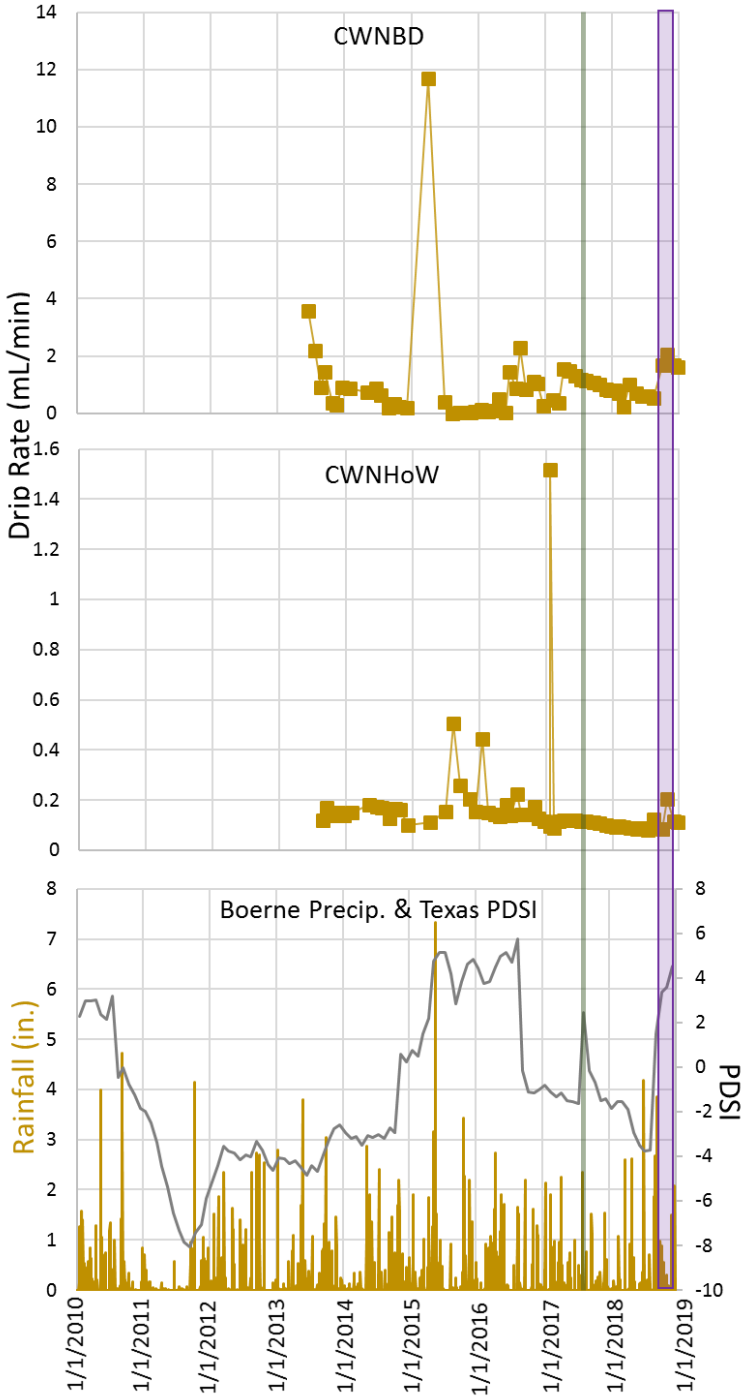

Fig. 3.1 c) Cave without a Name

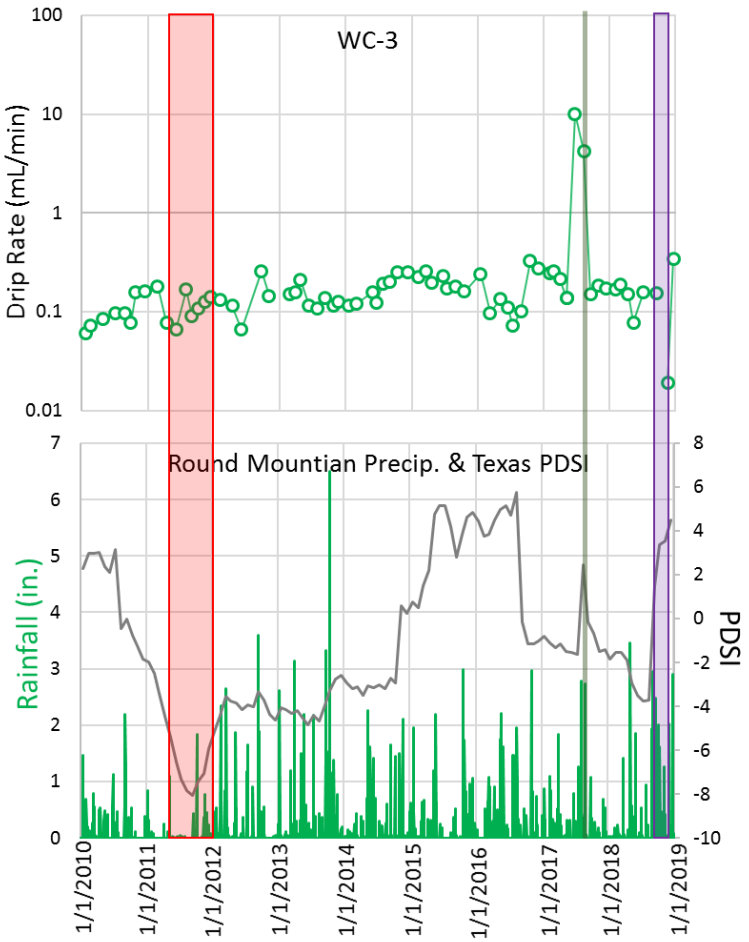

Fig. 3.1 d) Westcave Preserve

Fig. 3.1: Drip rate response (mL/min) of the 11 study sites. a) Inner Space sites b) Natural Bridge sites c) Cave without a Name sites and d) the Westcave site. Plots are grouped by cave, with area precipitation and Texas PDSI. Diffuse sites are solid squares, conduit sites are hollow circles, and intermediate sites are stars. The 2011 drought is indicated by the vertical red bar, 2017 Hurricane Harvey by the vertical green bar, and the wet autumn of 2018 by the vertical purple bar.

2017: Hurricane Harvey

Examining the drip rate plots (green bars in Fig. 3.1, Appendix B – Table B1) indicates that both ISHW and NBWS show a high short-term drip rate response to Hurricane Harvey, with an event average greater than one standard deviation outside of the non-event average (Appendix C - Table C2). ISLM and ISSR3 also show short-term drip rate highs, and though slightly delayed ISST and ISSR5 do as well. NBFE shows a local drip rate increase, though not as noticeable as the drip rate responses observed in the previous sites. In comparison, ISSR7, CWNBD, CWNHoW, and WC-3 show no noticeable drip rate response to Hurricane Harvey. The large increase in drip rate at WC-3 immediately preceding Hurricane Harvey was recorded in June 21 and August 9, and thus is in no way an effect of the hurricane. The cause of this large drip rate peak at WC-3 is unclear, as there is no large rainfall event, or even abnormally long period of steady rainfall, prior to the increase.

2018: Historically Wet Autumn

In response to the historically wet autumn of 2018, a few drip rate response patterns are apparent (purple bars in Fig. 3.1, Appendix B – Table B1). ISST Rear, ISLM Rear, ISHW, and CWN-BD all show a local drip rate increase (i.e. multiple consecutively increasing drip rate measurements). Similarly, ISSR3, ISSR5, NBFE, NBWS, and CWN-HoW all show a local drip rate maximum in response to the historic amounts of rainfall. Of these sites, the drip rate average for this event for ISLM Rear, NBFE, and NBWS fall outside of one standard deviation of the non-event drip rate (Appendix C - Table C3). The observed drip rate responses, especially for ISST Rear and ISLM Rear, continue into 2019. ISSR7 and WC-3 show no obvious drip rate response. Any response in ISSR7 is likely muted by the continual drip-rate decrease the site shows.

Table 3.1: Summary table of all drip rate responses of the studied sites to extreme events.

Site Name	Site Classification	Drip rate Response		
		2011 Drought	2017 Hurricane	2018 Wet Autumn
ISLM Rear	Diffuse	Significant year-long low, increase as the drought ends	One day high	Local increase, statistically significant
ISSR7	Diffuse	Increase as the drought ends	No response	No response
ISSR3	Intermediate	Significant year-long low, increase as drought ends	One day high	Local maximum
ISSR5	Intermediate	Significant year-long low, increase as drought ends	Delayed one day high	Local maximum
ISST Rear	Intermediate	Year-long low, increase as the drought ends	Delayed one day high	Local increase
ISHW	Conduit	Year-long low, increase as the drought ends	Significant one day high, statistically significant	Local increase
NBFE	Intermediate	Year-long low, increase as the drought ends	Short-term increase	Local maximum, statistically significant
NBWS	Conduit	Year-long low, increase as the drought ends	Historic short-term high, statistically significant	Local maximum, statistically significant
CWNBD	Diffuse	NA	No response	Local increase
CWNHoW	Diffuse	NA	No response	Local maximum
WC-3	Conduit	No response	No response	No response

DRIP WATER STABLE OXYGEN ISOTOPE PATTERNS OVER EXTREME EVENTS

2011: Historic Drought

Observing the data (red bars in Fig. 3.2, Appendix A - Table A1), ISSR3, ISSR7, and WC-3 show no obvious isotopic response to the drought. Conversely, the ISLM Rear site shows a distinct isotopic drop during the 2011 drought. However, as this site is in the minority, it is assumed that this drop may be due to some other factor, such as a change in the flow path above the site. Due to the lack of isotopic data from 2011 at several of the sites, any conclusion on the regional isotopic response to the drought is not possible (Appendix C - Table C4).

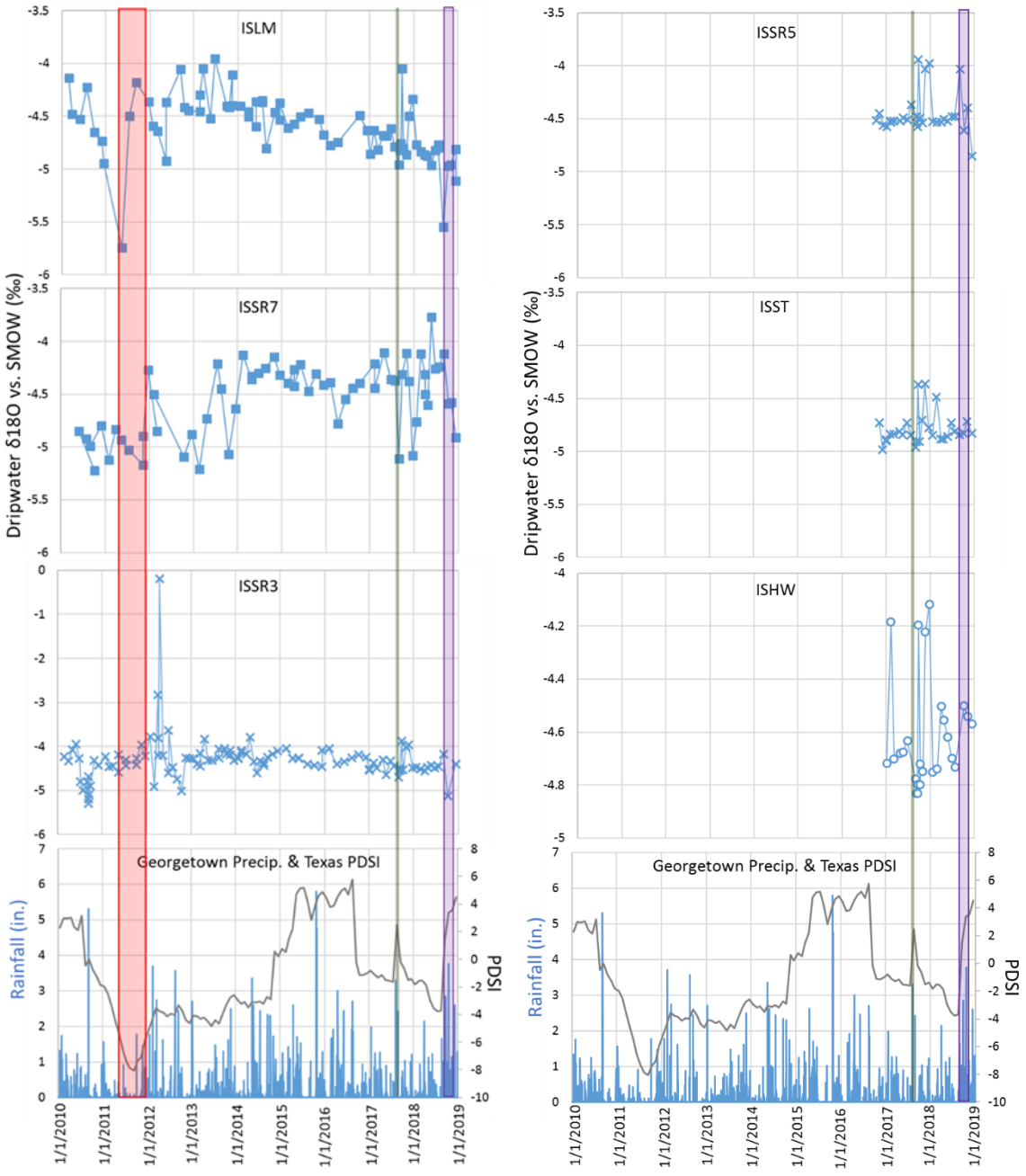

Fig. 3.2 a) Inner Space Cavern

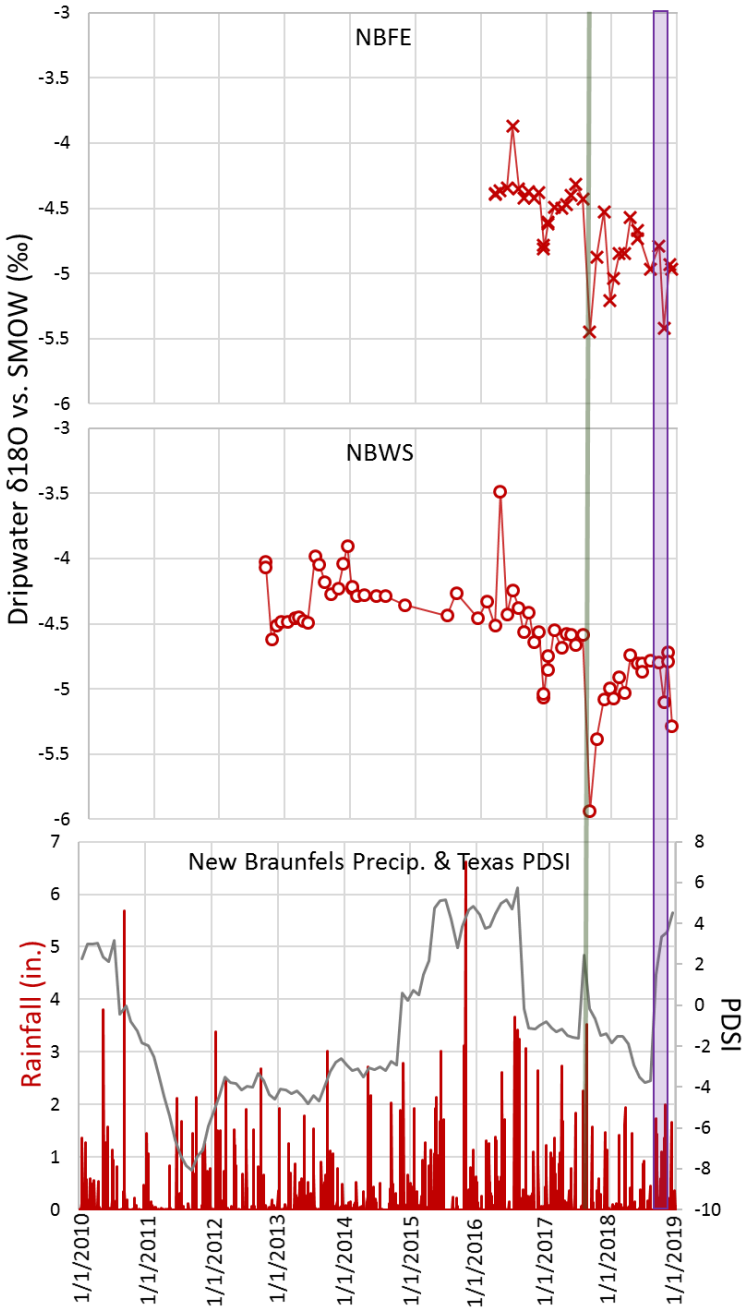

Fig. 3.2 b) Natural Bridge Caverns

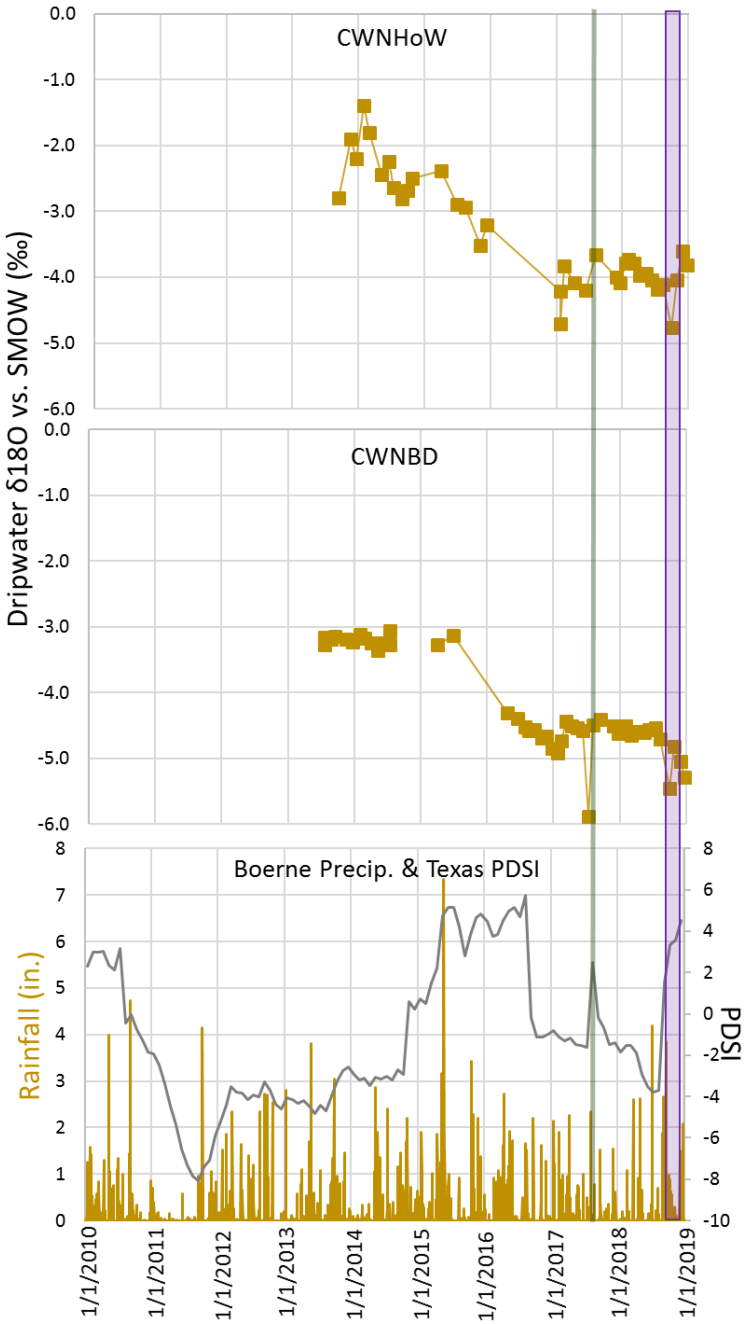

Fig. 3.2 c) Cave without a Name

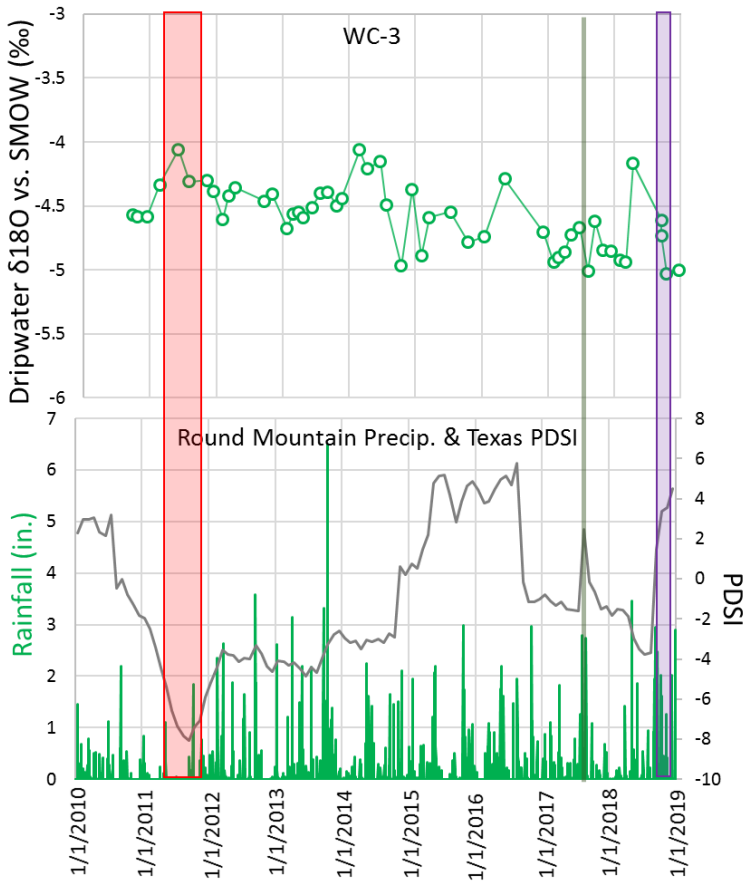

Fig. 3.2 d) Westcave Preserve

Fig. 3.2: Plots showing the oxygen isotopic response (‰ vs SMOW) of the 11 chosen sites. a) Inner Space sites, b) Natural Bridge sites, c) Cave without a Name sites, and d) the Westcave site. Plots are grouped by cave, with area precipitation and Texas PDSI. Diffuse sites are solid squares, conduit sites are hollow circles, and intermediate sites are stars. The duration of the 2011 drought is indicated by the vertical red bar, 2017 Hurricane Harvey by the vertical green bar, and the wet autumn of 2018 by the vertical purple bar.

2017: Hurricane Harvey

Rainwater associated with Hurricane Harvey was collected throughout the duration of the hurricane in the San Antonio (a residence) and Austin areas (a residence and the roof of the Jackson Geology Building, University of Texas at Austin) by L. Tian and J. Banner,

respectively. Both locations reveal a pattern of increasingly lower isotopic values of the rainwater as the storm progressed (Fig. 3.3) (Appendix A - Table A3). These low values for rainfall in hurricanes are attributed to Rayleigh distillation and water recycling (Lawrence et al., 1996). According to Frappier et al. (2007), the $\delta^{18}O$ value of tropical cyclone precipitation is approximately 6‰ lighter than other summer precipitation, and more intense tropical cyclones have lower $\delta^{18}O$ values. In comparison, the lightest water associated with Hurricane Harvey has a value of -13.3‰, which is approximately 9.5‰ lower than the average summer (May-August) value of Austin rainfall, -3.8‰ (Table 1.2).

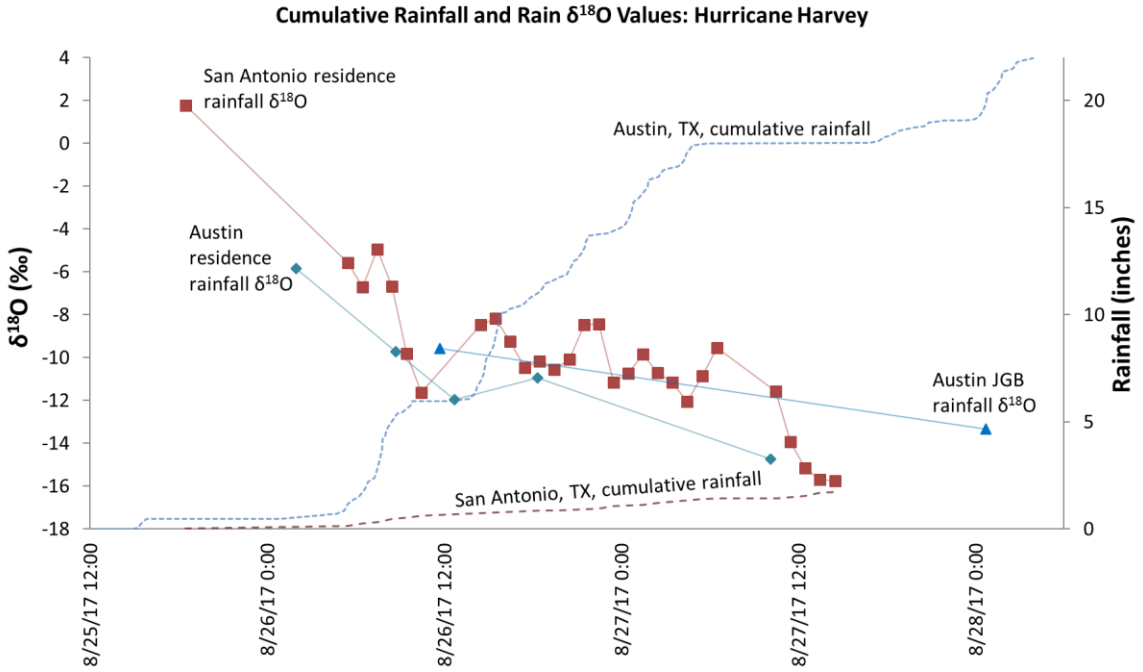

Fig. 3.3: Hurricane Harvey related rainfall amounts and oxygen isotope values from San Antonio and Austin (Austin acting as a proxy for the caves studied), Texas. San Antonio data is courtesy of Tian, L., and Gao, Y. (2018). Unpublished Hurricane Harvey stable oxygen isotope data, used with permission. University of Texas at San Antonio.

There are four obvious isotopic responses among the sites studied to Hurricane Harvey (green bars in Fig. 3.2, Appendix A – Table A1). First is the expected isotopic

response based on findings by Frappier et al. (2007), a sharp decrease in $\delta^{18}O$ values followed by a gradual return to the average drip water isotopic range. NBWS and NBFE both show this pattern, and the isotopic average during this event is greater than one standard deviation from the non-event average (Appendix C - Table C5). Second is a lack of an isotopic response. This response is shared by CWNBD, CWNHoW, and WC-3.

The third response is one shown only by ISSR7, a sharp drop followed by an immediate return to baseline, repeated twice. The fourth response is an unexpected one shared by all but ISSR7 of the Inner Space Cavern sites (ISST Rear, ISLM Rear, ISSR3, ISSR5, and ISHW), albeit with slightly different timing and duration, that of a stable oxygen isotope double peak (Fig. 3.2a). I hypothesize that this isotopic increase is caused by the hydraulic forcing of older, high $\delta^{18}O$ water (due to the preferential uptake of ^{16}O in evaporation) out of two separate storage zones in the epikarst. Given the extreme rainfall isotopic signature of Hurricane Harvey, rainwater from Hurricane Harvey was used as a natural tracer to create a drip water running mean composition model (refer to Methods section for more details).

Inner Space hydrogen isotope analyses

As stated prior, it is hypothesized that the unanticipated increase of ^{18}O values in the Inner Space sites following Hurricane Harvey (the above-described "double peak") is due to rainfall associated with Hurricane Harvey displacing water stored long-term in the epikarst. This older water would be expected to be depleted in ^{16}O and enriched in ^{18}O as water containing ^{16}O is preferentially taken up by evaporation. If this is the process that is occurring at these sites, then it would be expected that hydrogen isotopic pattern for each site would a) be different than what is expected given the hydrogen isotope values of Hurricane Harvey rainwater and b) follow the double peak pattern shown by the oxygen

isotopes. Similar to the water containing ^{18}O, water containing deuterium would be less likely to be taken up by evaporation processes, meaning that older evaporated water would have a higher deuterium concentration. In order to test this, Austin rainwater and Inner Space Cavern drip water collected between May and December of 2017 were analyzed for hydrogen isotopes (Appendix C - Table 6) and plotted (Fig. 3.4). Drip water from ISHW (conduit), ISSR3 (intermediate), and ISLM Rear (diffuse) were chosen to be run as they cover the full range of conduit to diffuse.

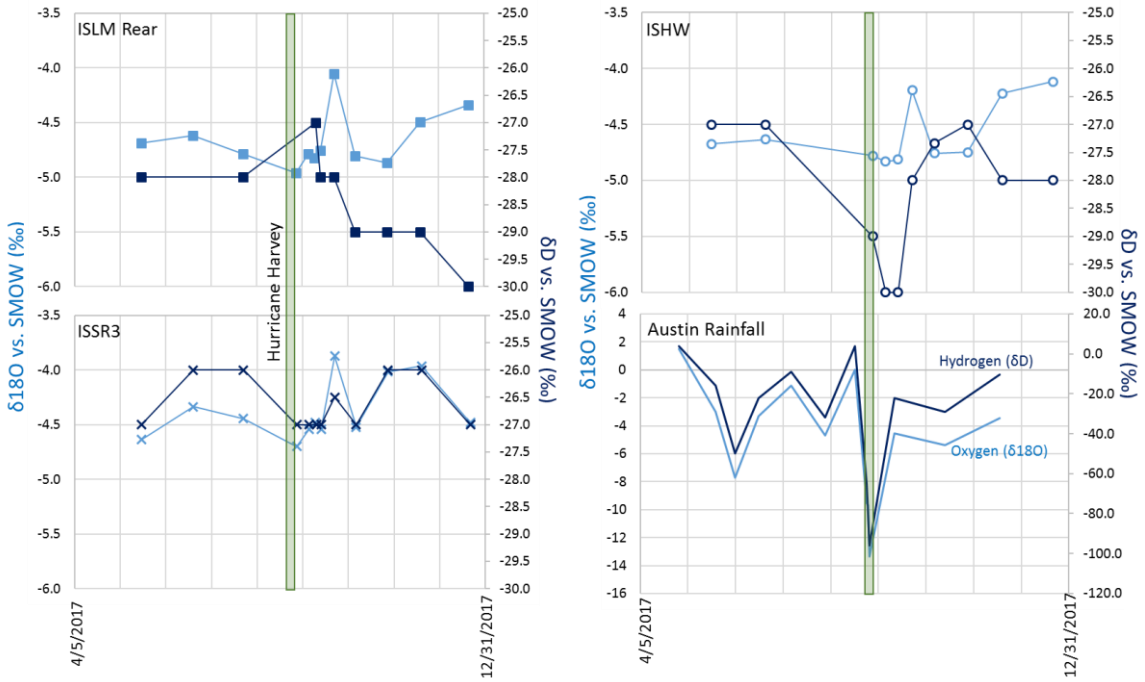

Fig.3.4: Oxygen and hydrogen isotopic values of Inner Space Cavern drip water and Austin rainfall. ISLM Rear is diffuse and indicated by solid squares, ISSR3 is intermediate and indicated by stars, ISHW is conduit and indicated by hollow circles, and rain is markerless. All vertical gridlines are 30 days apart.

It is clear that there is no single hydrogen isotope pattern, and thus likely older storage water being forced out of the pore spaces in the epikarst is not the only influence.

The hydrogen isotopes of the conduit site, ISHW, do not follow the oxygen isotope pattern of that site, and are actually closer to following at least the pattern if not the values of the rainfall hydrogen isotopes. Thus, for ISHW, a conduit site, it is likely that at least some measure of Hurricane Harvey rain is influencing the drip water and lowering the δD values of the drip water, though mixing is clear given that the ISHW δD minimum is still greater than the rainfall minimum. The δD values of the intermediate site, ISSR3 closely follow the pattern of the $\delta^{18}O$ values of the site and are not close to the rainfall isotope pattern, supporting the hypothesis of the forcing out of older water by Hurricane Harvey rain and little to no immediate influence of the Hurricane Harvey rainwater itself. The hydrogen isotope values of the diffuse site, ISLM Rear, do not follow the patterns of the Austin rainfall hydrogen values nor of the ISLM Rear oxygen isotope values. Instead, the oxygen isotope values slowly decrease over time by about 1‰. This fits with the description of diffuse site, one with a delayed, muted response, but does not explain the pattern observed in the oxygen isotope values

The relationship between the observed patterns and Hurricane Harvey become clearer when comparing the measured $\delta^{18}O$ and δD values of the drip water to the calculated deuterium excess of the water (Eq. 2).

$$d = \delta D - 8(\delta^{18}O), where\ d\ is\ the\ deuterium\ excess \quad \text{Eq. 2}$$

Deuterium excess is used to determine how the δD values of the samples differ from global meteoric water line (GMWL) of $\delta^{18}O$ vs. δD (Fig. 3.5). While not shown on Fig. 3.5, it is important to note that Hurricane Harvey rainwater does not differ greatly from the local meteoric water line (LMWL). Based on findings by Pape et al. (2010), drip water from these sites normally follows the LMWL.

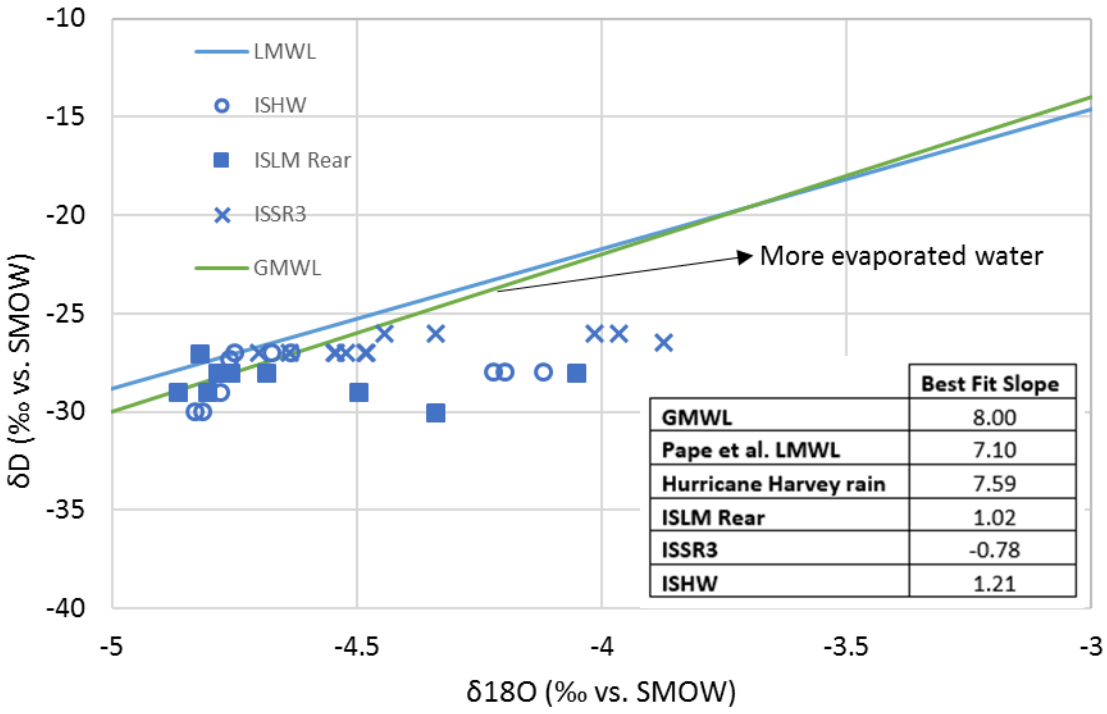

Fig. 3.5: $\delta^{18}O$ vs. δD of drip water from ISHW, ISLM Rear, and ISSR3 collected April-December 2017. The GMWL and LMWL (Local Meteoric Water Line) are plotted for comparison (Pape et al., 2010) and slopes of the best fit line for each site are included.

On average, global meteoric water has a deuterium excess value of 10. The smaller the calculated value is, relative to 10, the more evaporation has occurred from that water sample -. Observing the $\delta^{18}O$ and δD values of the drip water compared to the calculated deuterium excess of the water (Appendix C - Table C7), there is a clear mirroring of the

deuterium excess values and $\delta^{18}O$ values, with water enriched in ^{18}O having a low deuterium excess value for ISHW, ISLM Rear, and ISSR3 (Fig. 3.6).

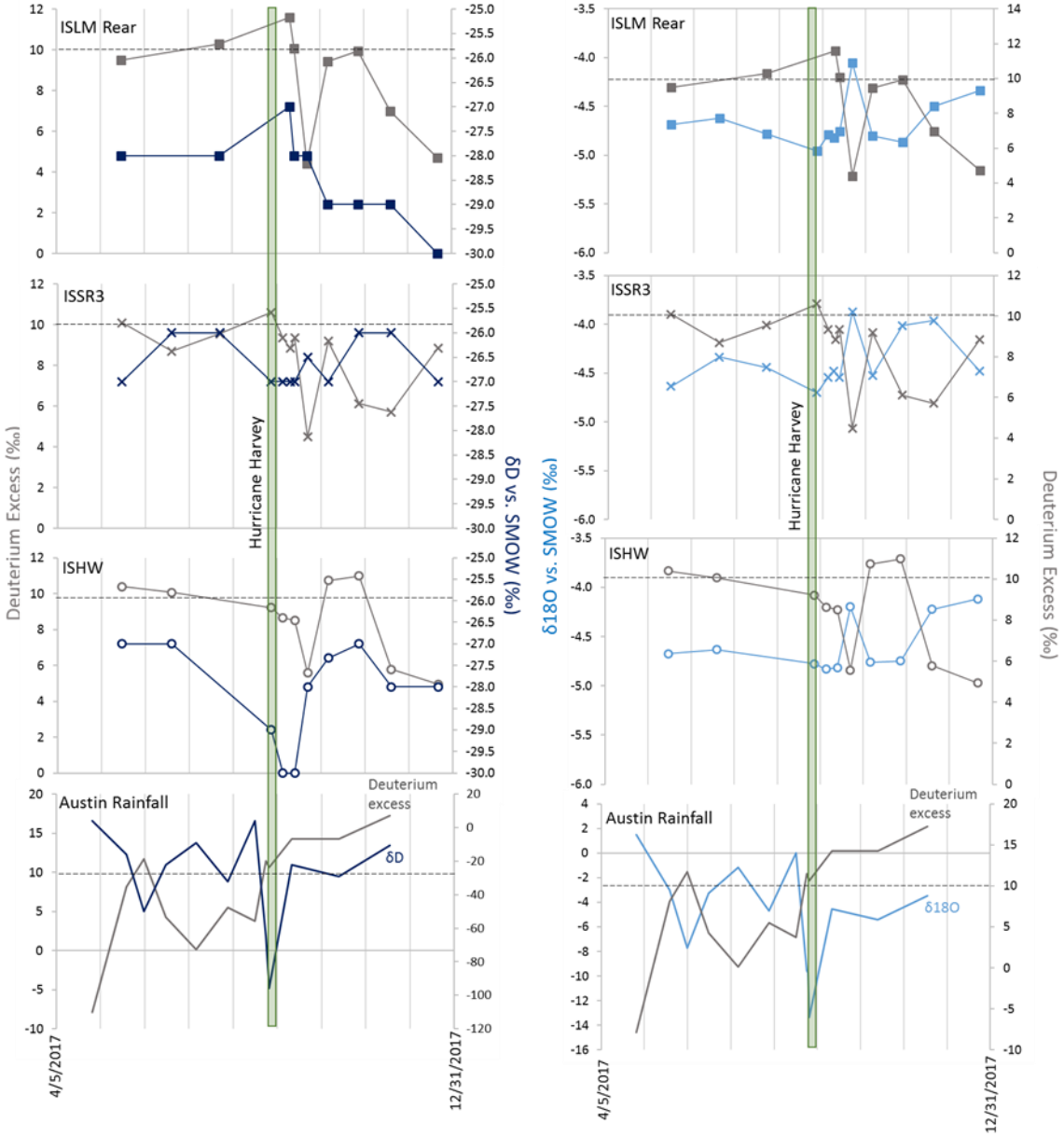

Fig. 3.6: Plots showing the relationship of the measured δD and measured $\delta^{18}O$ and the calculated deuterium excess of ISLM Rear, ISSR3, ISHW, and Austin rainfall. Data shown was collected between April and December of 2017, with each vertical line being 30 days apart.

As stated earlier, the observed peaks in the $\delta^{18}O$ values of the Inner Space sites following Hurricane Harvey were hypothesized to be the result of piston flow. Piston flow is the forcing out of water stored in the epikarst that has been influenced by evaporation, either while in the epikarst or prior to infiltration, and thus depleted in the lighter ^{16}O. The relationship between the deuterium excess values and $\delta^{18}O$ values supports that- higher $\delta^{18}O$ values at each of the three cave sites are associated with low deuterium excess values, which are indicative of evaporation processes. This interpretation is further supported by the fact that the rainfall during and after Hurricane Harvey has deuterium enrichment values greater than ten. It is unexpected that there are apparently two of these enriched water peaks, and that they occur at roughly the same time at each site, despite the clear differences in the conduit versus diffuse nature of each site. This may potentially be indicative of two separate long-term storage systems in the epikarst above Inner Space Cavern, and that the intensity of the Hurricane Harvey rainfall was sufficient to act as a piston and force this older water into the cave, regardless of normal flow pathways.

However, evaporation affects both δD and $\delta^{18}O$ of the water, but the δD values of the drip water barely changes. Thus, another possible explanation is water-rock interaction in the epikarst. Infiltrating water dissolves limestone, and since limestone contains oxygen, the resulting $\delta^{18}O$ value of the water starts to more closely mirror that of the bedrock limestone rather than the rainfall. To test this, a simple mass balance can be done (Eqn. 3) where δ_m is the $\delta^{18}O$ value of the drip water (for the double isotopic peak, this is averaged at -4.02‰), δ_a is the $\delta^{18}O$ value of the rain (the non-event average is -4.68‰), X_a is the fraction of the drip water $\delta^{18}O$ from the rain, and δ_b is the $\delta^{18}O$ value of the Edwards group limestone that Inner Space Cavern in formed in (averaged at -1.5‰, from Mench et al., 1980).

$$\delta_m = \delta_a X_a + \delta_b (1 - X_a) \qquad \text{Eqn. 3}$$

Solving for X_a, with these values, 79% of the drip water oxygen is from rainfall. Thus, the remaining 21% of the drip water oxygen is from the Edwards aquifer limestone. This explains the change in $\delta^{18}O$ values and the lack of change of the δD values of the post Hurricane Harvey double pulses. Stored water that has interacted with the surrounding limestone entered the cave by the piston action of the Hurricane Harvey rainfall. It is likely that the water forming the double isotopic peaks following Hurricane Harvey at the Inner Space Cavern sites has undergone some level of both evaporation and water-rock interaction, but in either case it is likely long-term stored water from the epikarst.

Drip Water Residence Time Model

The model which best fits the data was determined using the root mean square error (RMSE) between two samples, a drip water sample and a rainwater sample, in this case between water samples collected within 10 days of one another. The closest best-fit model has a RMSE of 0.196 (Fig. 3.7a), and the weakest best-fit model has a RMSE of 0.615 (Fig. 3.7b). A lower RMSE indicates a stonger fit between the model and the measured data. Excluding the shallow-cave site, WC-3, the average residence times that derive from the best-fit models for each site support the classifications of conduit, diffuse, and intermediate assigned to each site. The average modeled residence time of conduit-defined sites is 18 months, the average modeled residence time of intermediate-defined sites is 27 months, and the average modeled residence time of the diffuse-defined sites in 34.5 months (Fig. 3.7e). Owing to the very low maximum drip rate of WC-3 as compared to the other conduit sites, WC-3 could be re-defined as an intermediate site. However, given its extremely high coefficient of variability (Fig. 2.1), this classification is not ideal either.

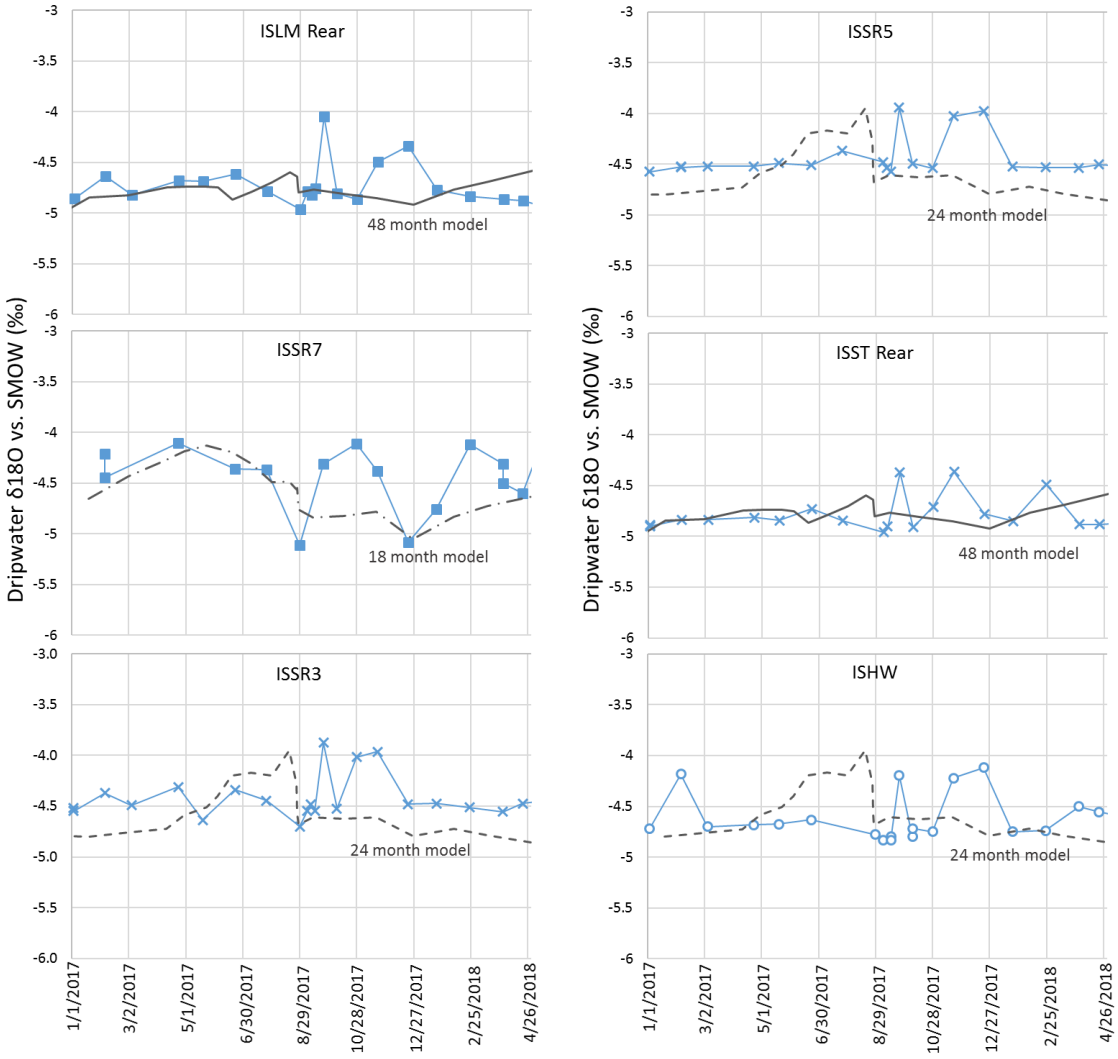

Fig. 3.7 a) Inner Space Cavern

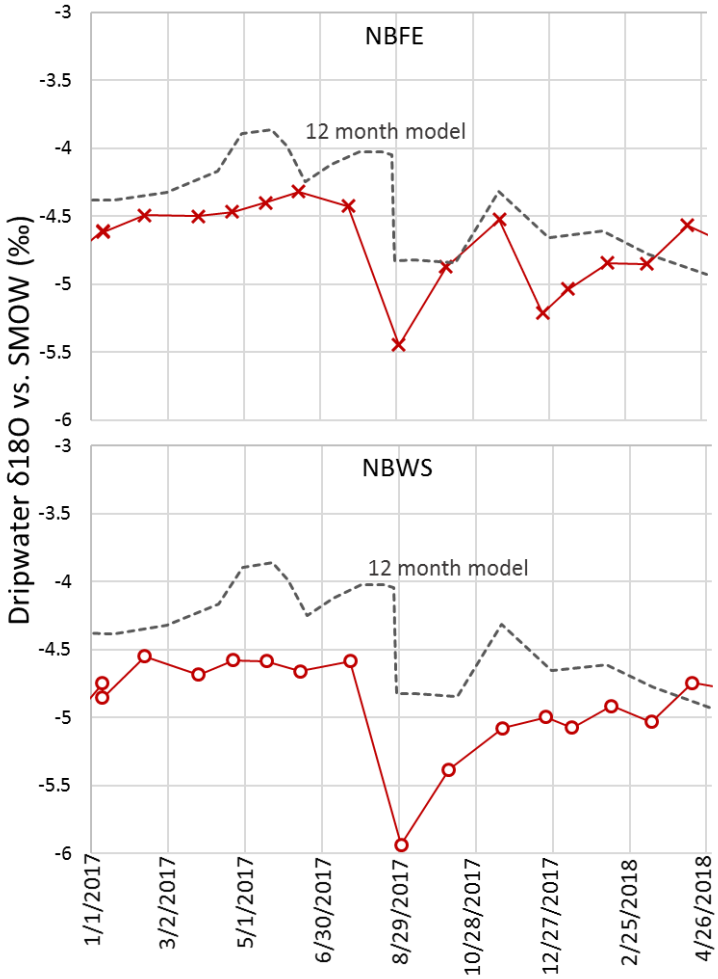

Fig. 3.7 b) Natural Bridge Caverns

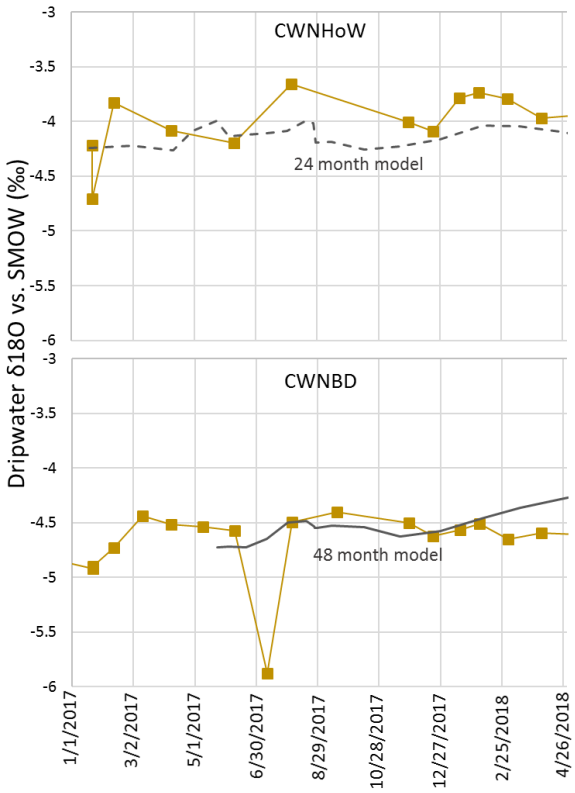

Fig. 3.7 c) Cave without a Name

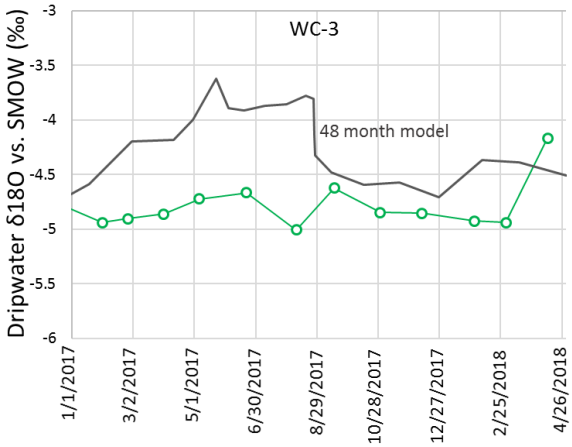

Fig. 3.7 d) Westcave Preserve

Classification	Site	Best fit storage period (months)	RMSE	Average storage period (months)
Conduit	*WC-3*	*48*	*0.615*	*18*
	ISHW	24	0.285	
	NBWS	12	0.568	
Intermediate	ISST	48	0.196	27
	ISSR3	24	0.296	
	ISSR5	24	0.341	
	NBFE	12	0.372	
Diffuse	BD	48	0.409	34.5
	ISLM	48	0.228	
	HoW	24	0.237	
	ISSR7	18	0.282	

Fig. 3.7 e) Best-fit RMSE values and average storage period. WC-3 is grayed out as the best-fit storage period for WC-3 was not included in the calculation of the average storage period of the conduit-type sites due to its unusual behavior.

Fig. 3.7: Measured $\delta^{18}O$ values of the sites used in this study and the best-fit running mean drip water composition models. a) Inner Space sites are blue, b) Natural Bridge sites are red, c) Cave without a Name sites gold, and d) the Westcave site is green. The best-fit, based on visual analysis and RMSE calculations, drip water residence time models are in grey with line style dependent on the best modeled residence time. e) Table of best-fit RMSE values.

2018: Historically Wet Autumn

In response to the historically wet autumn of 2018, many sites show a $\delta^{18}O$ decrease of approximately 0.5‰ (purple bars in Fig. 3.2, Appendix A - Table A1). Those that do not show a notable isotopic decrease show no response, ISST Rear and ISHW show no response. ISLM Rear, CWNBD, and CWNHoW all show an isotopic decrease, greater than 0.5‰, during the month of September of 2018. ISSR3 and NBFE show an isotopic decrease during October. ISSR5, on the other hand, shows a gradual decrease from September through December, reaching a historic low isotopic value, greater than a single standard deviation of the non-event isotopic data (Appendix C- Table C8). ISSR7, WC-3, and NBWS show a similar decrease to ISSR5, though never reaching historic lows. Thus, diffuse sites tend to show a short-lived isotopic drop, intermediate sites have a tendency to show a delayed drop or gradual decline, and conduit sites have a tendency to show a gradual decline, when there is an apparent response. These results are counter-intuitive as one would expect conduit-type sites to show an abrupt drop and the diffuse-type sites to show a more gradual response. Of these responses, the gradual decrease is most likely to be preserved in the speleothem calcite record, leading to the interpretation that intermediate to conduit sites are the most appropriate for recording wet seasons.

Table 3.2: Summary table of $\delta^{18}O$ responses of the studied sites to extreme events.

Site Name	Site Classification	$\delta^{18}O$ Response		
		2011 Drought	2017 Hurricane	2018 Wet Autumn
ISLM Rear	Diffuse	Drop in $\delta^{18}O$ values	Delayed double peak	September decline
ISSR7	Diffuse	No response	Sharp drop immediately returning to baseline	Gradual decline
ISSR3	Intermediate	No response	Delayed double peak	Gradual decline
ISSR5	Intermediate	NA	Delayed double peak	Gradual decline to historic low,
ISST Rear	Intermediate	NA	Delayed double peak	No response
ISHW	Conduit	NA	Delayed double peak	No response
NBFE	Intermediate	NA	Sharp drop followed by gradual return to baseline,	October decline
NBWS	Conduit	NA	Sharp drop followed by gradual return to baseline	Gradual decline
CWNBD	Diffuse	NA	No response	September decline
CWNHoW	Diffuse	NA	No response	September decline
WC-3	Conduit	No response	No response	Gradual decline

CALCITE GROWTH RATE PATTERNS OVER EXTREME EVENTS

2011: Historic Drought

From the available data, a few growth rate response patterns are obvious by visual analysis alone of the growth rate plots (red bar in Fig. 3.8, Appendix B – Table B2). It is clear that ISLM Rear, ISSR7, NBWS, and WC-3 show no noticeable growth rate response to the drought conditions. Although there is a growth-rate low during the drought period at ISLM Rear, ISSR7, and NBWS, it is just the low summer growth period that is characteristic of these deep cave sites, and the growth-rate low at these sites during the drought is not any longer or more extreme than the non-event years summer low. Conversely, ISST Rear and ISSR3, both intermediate sites, show a long period of no/low growth during the drought, with ISST Rear showing an average growth rate of 0.30 mg/day compared to the non-event average growth rate of 3.46 mg/day (Appendix C - Table C9). Thus, it is likely that a year-long drought could appear in an intermediate drip site speleothem record as a period of anomalously low growth.

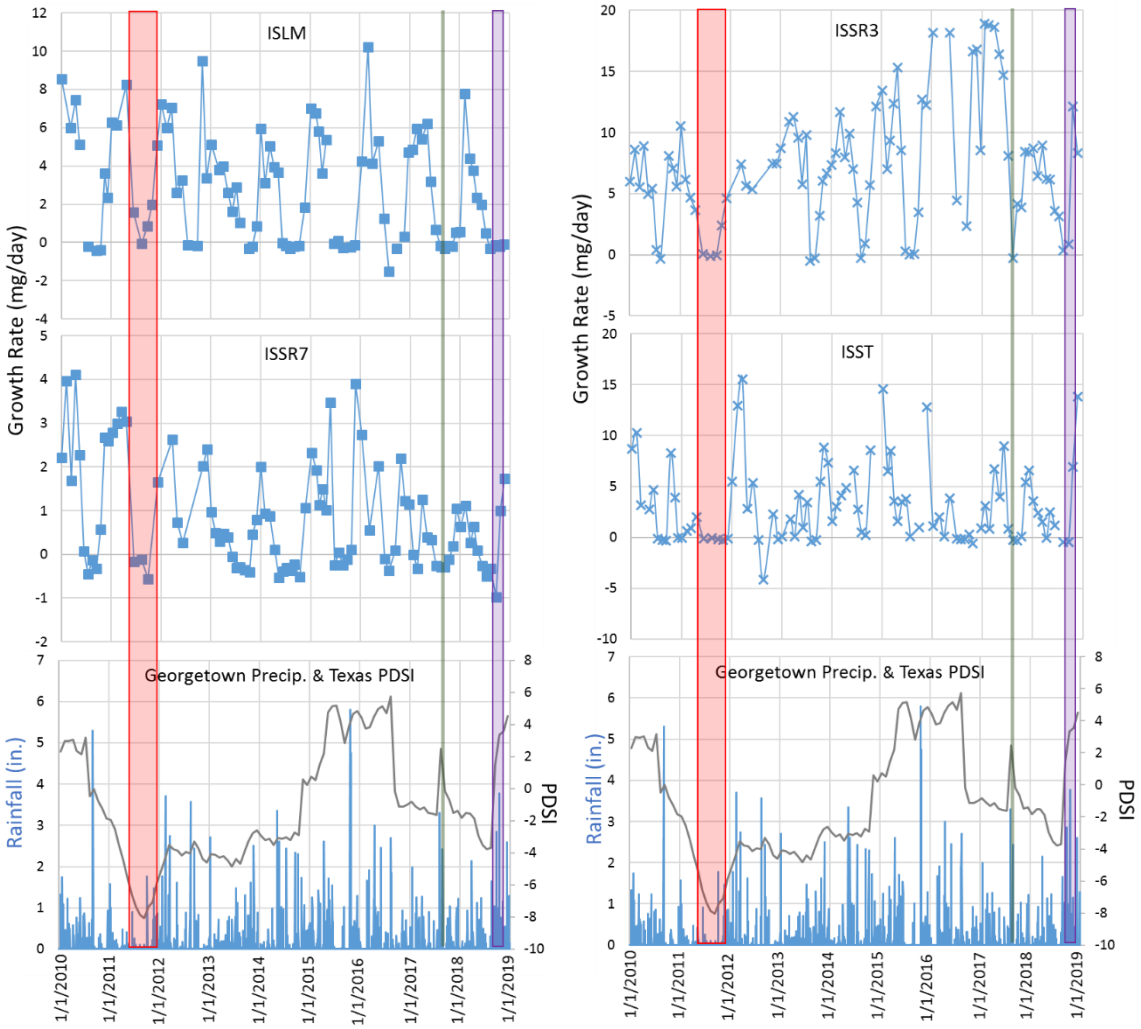

Fig. 3.8 a) Inner Space Cavern

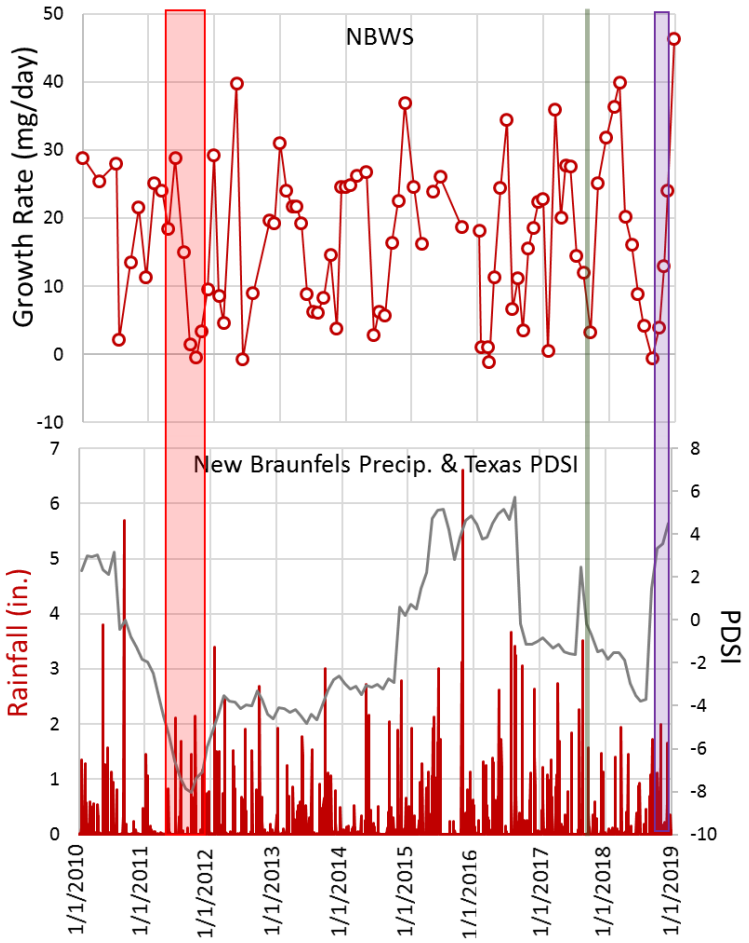

Fig. 3.8 b) Natural Bridge Caverns

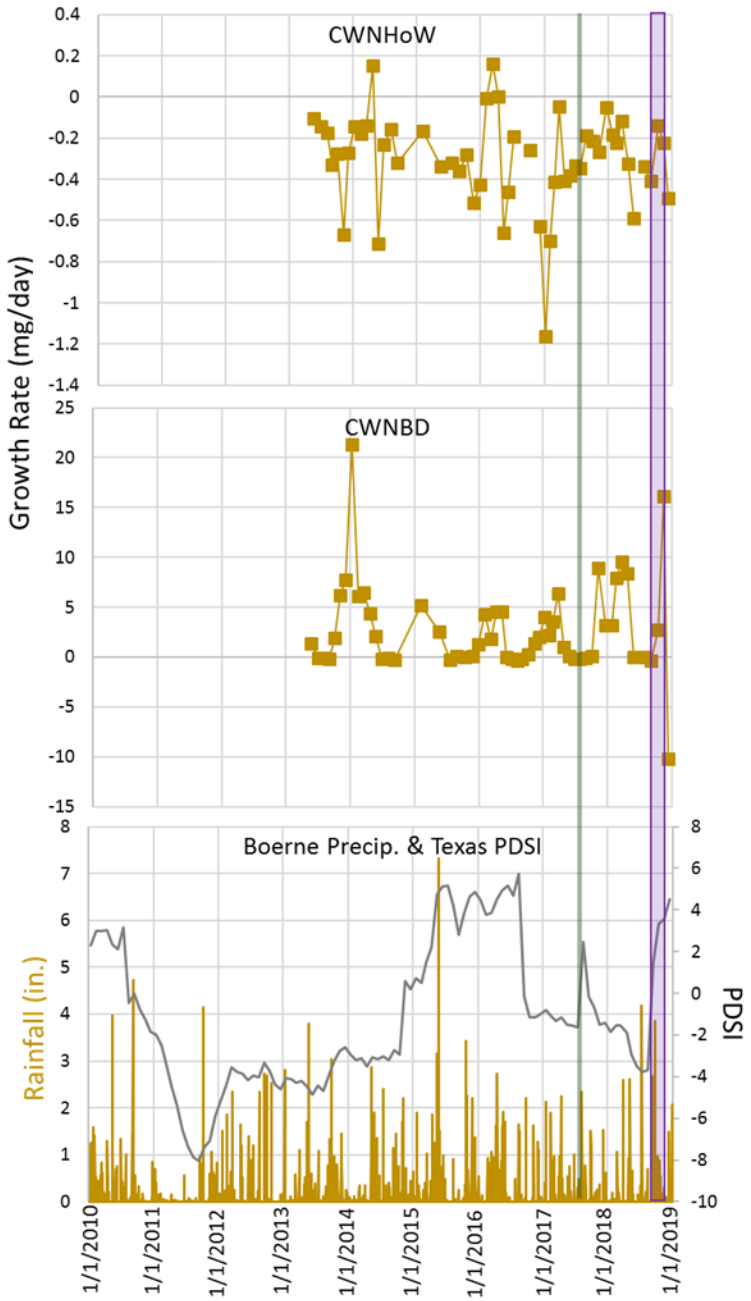

Fig. 3.8 c) Cave without a Name

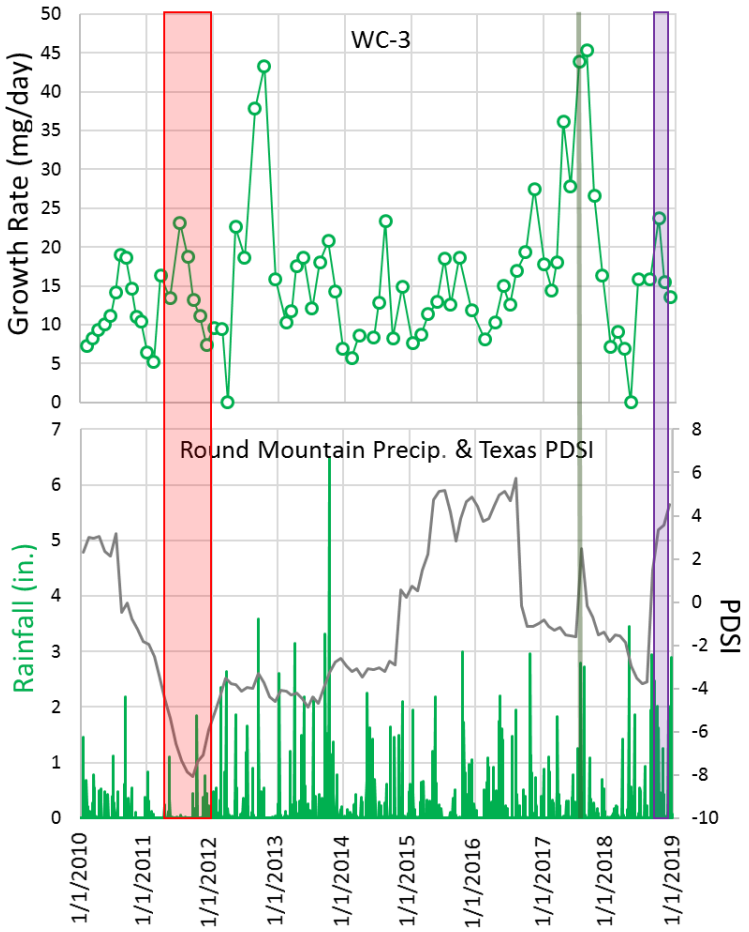

Fig. 3.8 d) Westcave Preserve

Fig. 3.8: Plots of the growth rate (mg/day) of the 11 sites. a) Inner Space sites, b) Natural Bridge sites, c) Cave without a Name sites, and d) the Westcave site, including area precipitation and Texas PDSI. Diffuse sites are squares, conduit sites are circles, and intermediate sites are stars. The 2011 drought is the vertical red bar, 2017 Hurricane Harvey the green bar, and the 2018 wet autumn the purple bar.

2017: Hurricane Harvey

From visual analysis of Fig. 3.8 (area highlighted by the green bar, Appendix B – Table B2) alone, there is no immediately obvious growth rate response to Hurricane Harvey at any of the sites. This makes sense as it was a single event lasting only a few days, and during the summer. As summer is a low- to no- growth season for these temperate deep caves (Banner et al., 2007), a short event during the summer months, such as a hurricane, would be unlikely to greatly affect speleothem growth. In WC-3, a shallow cave with high summer growth, a slight increase in growth is present in the growth rate time series, but is not historically high (Appendix C - Table C10).

2018: Historically Wet Autumn

There are two main growth rate responses, based on analysis of Fig. 3.8 (area highlighted by the purple bar, Appendix B – Table B2) alone, among the sites studied in response to the historically wet autumn of 2018. Firstly, ISLM Rear, CWN-HoW, and WC-3 all show no visible growth rate response. On the other hand, ISST Rear, ISSR3, ISSR7, NBWS, and CWNBD all show a growth rate peak/ increase at the end of 2018, though this is expected given the growth-rate pattern of these sites. These sites span the range of conduit to diffuse. ISST Rear, NBWS, and ISSR7 continue to show a higher-than-average growth rate in response to the fall of 2018 into the early months of 2019. The site ISST Rear shows growth rates greater than one standard deviation outside of the non-event years for November-December 2018 (Appendix C- Table C11).

Table 3.3: Summary of all growth rate responses of the studied sites to extreme events.

Site Name	Site Classification	Growth rate Response		
		2011 Drought	2017 Hurricane	2018 Wet Autumn
ISLM Rear	Diffuse	No response	No response	No response
ISSR7	Diffuse	No response	No response	High into 2019
ISSR3	Intermediate	Long period of low growth	No response	Local increase
ISST Rear	Intermediate	Long period of low growth	No response	High into 2019,
NBWS	Conduit	No response	No response	High into 2019
CWNBD	Diffuse	NA	No response	Local increase
CWNHoW	Diffuse	NA	No response	No response
WC-3	Conduit	No response	No response	No response

STATISTICAL TESTS

Though notable responses to events were described initially as being greater than a single standard deviation from the mean of the non-event data, this is not a viable way to determine the statistical significance of the event measurements as compared to the non-event data. In order to more accurately describe and understand the differences between the extreme event responses and non-event measurements, the drip rate, growth rate, and $\delta^{18}O$ responses of each site to each event were statistically compared to the non-event data of that site. As most the data used in this study is not normally distributed, a Wilcoxon rank sum test for non-normal data was used (i.e., the "ranksum" test in Matlab), in which the null hypothesis is that the event data and non-event data are a single population. The resulting p-values were then recorded, where a p-value of less than 0.05 is significant (Table 3.4). That is, there is a less than 5% probability that the differences observed are due to chance, so the event and non-event data are probably two different populations.

Table 3.4: Wilcoxon rank sum test p-values of each site's event responses as compared to their non-event data. Values of less than 0.05 are significant, and are highlighted.

	2011 Drought			*2017 Hurricane Harvey*			*2018 Wet Autumn*		
Site	**Drip rate**	**Growth rate**	**δ18O**	**Drip rate**	**Growth rate**	**δ18O**	**Drip rate**	**Growth rate**	**δ18O**
ISST Rear	0.1655	0.0150	NA	0.1600	0.1173	0.5805	0.0604	0.5003	0.5118
ISLM Rear	0.0172	0.7852	0.5305	0.6240	0.0755	0.1315	0.0423	0.1000	0.0018
ISSR3	0.0170	0.0083	0.6232	0.4057	0.2560	0.3447	0.6379	0.8764	0.5703
ISSR5	0.2169	NA	NA	0.0096	NA	0.8046	0.9844	NA	0.7360
ISHW	0.0042	NA	NA	0.0035	NA	0.0364	0.9539	NA	0.1735
ISSR7	0.0984	0.2544	0.0841	0.0402	0.2282	0.6442	0.1439	0.8549	0.9157
NBFE	0.0269	NA	NA	0.7351	NA	0.0750	0.1015	NA	0.0372
NBWS	0.0063	0.3589	NA	0.1610	0.8119	0.0214	0.0450	0.7319	0.0194
CWNBD	NA	NA	NA	0.3940	0.3376	0.6714	0.0095	0.5633	0.0063
CWNHoW	NA	NA	NA	0.2078	NA	1.0000	0.4587	NA	0.1988
WC-3	0.1710	0.9503	0.0144	0.6170	0.0329	0.3627	0.9569	0.3693	0.0396

2011 drought: May-Dec. 2011

2017 HH: Aug. 25-Oct. 31

2018 Wet Autumn: Sept.-Dec. 2018

Combining this data with site classifications and the responses described from the time series' in the sections above (Table 3.5), and some patterns become obvious. Firstly, a majority of the statistically significant responses are associated with intermediate and conduit-type sites. Secondly, the observed responses from the time series of the significant sites tend to mirror each other. For example, all sites showing statistically significant drip rate changes in response to the 2011 drought have an observed long period of low drip rate.

Table 3.5: Sites showing statistically significant p-values, their classifications, and the observed responses from the time series. Diffuse sites are highlighted in pale blue, intermediate sites in medium blue, and conduit sites in dark blue. Gray cells indicate that no other statistically significant relationships were found between the event data and non-event data for that measurement.

	2011 Drought			2017 Hurricane Harvey			2018 Wet Autumn		
	Site	**Class**	**Response**	**Site**	**Class**	**Response**	**Site**	**Class**	**Response**
Drip Rate	ISLM Rear	Diff	Long drip rate low	ISSR5	Inter	Delayed high	ISLM Rear	Diff	Drip rate increase
	ISSR3	Inter	Long drip rate low	ISHW	Cond	Drip rate high	NBWS	Cond	Local drip rate high
	ISHW	Cond	Long drip rate low	ISSR7	Diff	No noticeable response	CWNBD	Diff	Drip rate increase
	NBFE	Inter	Long drip rate low						
	NBWS	Cond	Long drip rate low						
Growth Rate	ISST	Inter	Long period of low growth	WC-3	Cond	Slight growth increase			
	ISSR3	Inter	Long period of low growth						
δ18O	WC-3	Cond	No noticeable response	ISHW	Cond	Isotopic double peak	ISLM Rear	Diffuse	Sharp decrease
				NBWS	Cond	Sharp drop, slow return	NBFE	Inter	Sharp decrease
							NBWS	Cond	Gradual decrease
							CWNBD	Diff	Sharp decrease
							WC-3	Cond	Gradual decrease

Chapter Four: Discussion

Drip Rate and Growth Rate Patterns over Extreme Events

In response to the 2011 drought, the most prevalent response in the intermediate to conduit type sites is a drip rate decrease, and this response is also statistically significant (Fig. 3.1, Table 3.5). This is expected in the intermediate and conduit sites especially as they likely are supplied by relatively small epikarstic reservoirs of water. As drip rate is related to calcite growth rate (Muñoz-García et al., 2016), it is expected that the 2011 drought would be preserved as a period of low growth. This is in fact shown in the longer than average low growth rate periods observed in ISSR7, ISSR3, and ISST (Fig. 3.8).

In response to Hurricane Harvey, several sites show the drip rate increase that would be expected with a sudden influx of water, with the exception of ISSR7, CWNBD, CWNHoW and WC-3 (Fig. 3.1). The drip rate of ISSR7 had been steadily decreasing since the beginning of 2016, perhaps due to a change in the epikarst above the site, such as a change in the flow path that the site is sourced from, effectively masking any drip rate response of the site. Boerne, the town in which Cave without a Name is located, only received 1.19 in. of rain associated with Hurricane Harvey, so the lack of response is not unexpected, especially due to the diffuse nature of both CWN-BD and CWN-HoW (Fig. 3.1). On the other hand, Round Mountain, the location of Westcave preserve, received over 4 in. of Hurricane Harvey rain. WC-3 is a more conduit-type site (Fig. 3.1), which makes the lack of response at WC-3 is more unexpected. The lack of drip rate response may be due to the fact that Hurricane Harvey ended August 29, 2017, and the next drip rate measurement at Westcave wasn't taken until the 15th of September. Thus, as the site is more conduit-like, any drip rate response may have been missed by sampling. Again, however, WC-3 has features of both conduit and diffuse type sites. Similar a conduit site,

WC-3 has a high drip rate variability, but similar to a diffuse site it has a relatively low drip rate maximum (Fig. 3.1). Given the short length of the event, no growth rate response was expected and none was observed. Though there is a statistically significant growth rate increase at WC-3 in response to Hurricane Harvey, this is the only site that shows any growth rate response (Table 3.5).

In response to the 2018 wet autumn, most of the intermediate to conduit type sites show a drip rate increase, with the increase continuing into 2019 in some cases (Fig. 3.1). This increase, though not outside of the drip rate range shown by the sites in non-event years, could be enough to translate into a growth rate increase and thus a thicker growth band. The calcite growth rate data for NBWS, CWNBD, and ISST support this by having higher than average growth rates for the months during and following the 2018 wet autumn (Fig. 3.8).

OXYGEN ISOTOPE PATTERNS OVER EXTREME EVENTS

During and subsequent to the 2011 drought, no isotopic response in $\delta^{18}O$ was observed in a majority of the sites (Fig. 3.2). ISLM Rear shows a distinct isotopic drop during the 2011 drought. However, as this site is the only one to show a response, it is assumed that this drop may be due to some other factor, such as a change in the flow path above the site. The continuous overall decrease in drip rate from 2010-2018 at ISSR7 does seem to indicate some change in the overall nature of the drip sourcing the site (Fig. 3.1), perhaps a closing of a previously open water path. Due to the lack of isotopic data from 2011 at several of the sites, any conclusion on the regional isotopic response to the drought is difficult. If an isotopic response was apparent, it is likely that water entering the caves would have a higher $\delta^{18}O$ value. Any precipitation that falls during an extended drought

would likely undergo significant evaporation and thus isotopic fractionation prior to entering the cave, resulting in a higher $\delta^{18}O$ value. .

In response to Hurricane Harvey, the most notable responses were in the Inner Space Cavern and Natural Bridge Caverns sites. All but ISSR7 of the Inner Space Cavern sites show a double isotopic peak (Fig. 3.2), interpreted as older evaporated water entering the cave by piston flow. ISSR7 shows a double isotopic decrease, likely caused by the extremely low $\delta^{18}O$ values of Hurricane Harvey rainfall (Fig. 3.3). Each peak shown by the majority of the Inner Space sites only lasts about a month, and thus is unlikely to be noticeable in any resulting speleothem calcite due to its short duration and timing. As stated earlier, these sites show low summer growth, with the maximum growth occurring between December and April (Banner et al., 2007). These oxygen isotope peaks first appear in September, meaning they may not be well recorded since growth rate is still low at this point of the year at these sites. The Natural Bridge Caverns sites show the response described by Frappier et al. (2007), a sharp isotopic drop followed by a gradual return to the average drip water isotopic range, indicative of mixing with recent hurricane recharge water.

The sharp drop and gradual return to baseline shown by the Natural Bridge sites is likely to be preserved and visible in the speleothem calcite record. This is due to the fact that the return to baseline occurs over several months, and that these months (September through December) are periods of calcite growth. The double peak response of a single day peak followed by 1-2 days peak shown in the Inner Space sites probably is not sufficiently long enough to be preserved in a significant (i.e. able to be sampled) amount of calcite as each peak is only at maximum a single month in duration, though it would depend on the site and the amount of growth that occurs over the period the peaks are visible. For an Isotope Ratio Mass Spectrometer measurement, approximately 100 μg of

calcite is needed for oxygen isotope analysis, though nonstandard techniques may require much less. Width of the growth band required depends on the sampling tool used. If using a Secondary Ion Mass Spectrometer, growth bands greater than 10 μm can be sampled (Kitan et al., 2010).

The lack of response in the Cave without a Name sites (CWNBD and CWN-HoW) is likely due to the fact that the area only received 1.19 in. of rain associated with Hurricane Harvey. Considering the diffuse nature of both sites (Fig. 3.2) as well, and the lack of isotopic response is not unexpected. On the other hand Westcave preserve received over 4 in. of Hurricane Harvey rain and WC-3 is a more conduit-type site (Fig. 3.2). The lack of isotopic response at this site may be due to the fact that Hurricane Harvey ended August 29, 2017, and the next water sample at this location was collected the 15th of September. That is, any isotopic response may have been missed by this collection interval. Calcite growth $\delta^{18}O$ would be a means to assess if there was an isotopic response, since the plate substrate was deployed continuously over the interval 8/9/17 to 9/14/17, and since WC is ventilated year-round and there is thus no seasonal cessation of calcite growth (Casteel and Banner 2015). To determine if any isotopic response to Hurricane Harvey occurred at Westcave and was preserved in the calcite, the calcite grown on the glass substrate during this time period could be measured for $\delta^{18}O$ and compared to other non-event calcite. These samples are in the Banner lab archive, and could be analyzed to further this research.

In response to the 2018 wet autumn, many sites show an isotopic decline of up to 0.5‰ (Fig. 3.3). Those that do not show a notable isotopic decline show no response. ISST Rear and ISHW show no response. Diffuse sites show a short-lived isotopic drop in a single month, intermediate sites show a delayed drop or gradual decline over three months, and conduit sites show a gradual decline over three months, when there is an apparent response. It is important to note that a short-lived drop would be more expected

of a conduit site than a diffuse site, and that a gradual decline would be more expected of a diffuse site given the longer residence time of water above the site. Why the response seen is the opposite is unclear- perhaps there is a perched water table which has reached full capacity in the vadose zone, a non-meteoric source of water affecting the area above the diffuse sites, or some other unconsidered hydrologic process. It is also possible that at the diffuse sites, the large volume of rain water in the autumn of 2018 is forcing stored and altered (i.e. more enriched in ^{18}O due to evaporation) Hurricane Harvey water into the cave, resulting in the short-term isotopic drop. If this is the case, at the conduit-type sites this pulse of stored hurricane water could have been missed by the sampling interval, and the observed slow decrease is the true signature of the large amounts of rainfall associated with the wet autumn. Testing this hypothesis is beyond the scope of this study. Of these responses, the gradual decline is most likely to be preserved in the speleothem calcite record, leading to the interpretation that intermediate to conduit sites are the most appropriate for recording wet seasons.

Hydrogen Isotope Patterns Across Hurricane Harvey

As stated earlier, the observed "peaks" in the $\delta^{18}O$ values of the Inner Space sites following Hurricane Harvey were hypothesized to be the result of piston flow. Piston flow is the forcing out of water stored in the epikarst that has been under the influence of evaporation, either while in the epikarst or prior to infiltration, and thus depleted in the lighter ^{16}O. The relationship between the deuterium excess values and $\delta^{18}O$ values supports the idea that higher $\delta^{18}O$ values at each of the three cave sites are associated with low deuterium excess values, which are indicative of evaporation processes. This interpretation is further supported by the fact that the rainfall during and after Hurricane Harvey has deuterium excess values greater than ten. However, as deuterium values do not change,

long-term storage and water-rock interaction is another hypothesis, in which approximately 79% of the oxygen in the water is sourced from the rainfall, and the remaining 21% is sourced from the limestone the water seeped through. In either case, the double isotopic peaks are interpreted as pulses of older stored water. It is unexpected that there are two of these long-term storage pulses, and that they occur at roughly the same time at each site, despite the clear differences in the conduit versus diffuse nature of each site. This may be indicative of two separate, long-term storage systems in the epikarst above Inner Space Cavern. The intensity of the Hurricane Harvey rainfall was then sufficient to act as a piston and force this older water into the cave, regardless of normal flow pathways.

It is likely that the two observed ^{18}O enrichment events following Hurricane Harvey at the Inner Space Cavern sites are indicative of older water stored in and then forced out of the epikarst by infiltrating Hurricane Harvey rainwater. A combination of factors are probably influencing each site to different degrees depending on their flow pathways, conduit or diffuse nature, overlying topography, and many other factors. These factors include the forcing out of older ^{18}O and ^{2}H enriched water, the input of ^{18}O and ^{2}H depleted Hurricane Harvey water, and processes such as water-rock interaction of older water , possibly changing the oxygen isotope values of the water, in the epikarst. In regards to paleoclimatology studies, it is clear that one cannot expect any single site to react to an extreme event in the same way another site does given the large number of factors that influence water entering the cave.

RESPONSES LIKELY TO BE PRESERVED IN SPELEOTHEM CALCITE

From the observed data in the deep cave sites (ISLM Rear, ISST Rear, ISSR5, ISSR3, ISSR7, ISHW, NBFE, NBWS, CWNHoW, and CWNBD), it is clear that even among sites fed by a similar pattern (conduit, diffuse, or intermediate) there is a wide

variety of responses to individual extreme events. However there is for each event, a single observed response that is most likely to be preserved in speleothem calcite and thus useful for paleoclimatology. These preserved responses are all characteristic of conduit to intermediate type sites. For the drought, this is an extended period of low growth. For the hurricane, the most likely response to be preserved is the significant isotopic decrease followed by a slow increase to pre-hurricane baseline values, as described by Frappier et al. (2007). The wet autumn would most likely be preserved as a period of higher growth combined with an isotopic decrease of about 0.5‰. Neither of these changes would be historic in scale, but would be at least measureable in the speleothem record, however it could easily be construed as the variation observed in the speleothems during a non-extreme event year.

These most-likely to be preserved responses are similar in that they are observed in speleothems associated with drip sites that are designated as intermediate to conduit, the diffuse-type sites simply result in too much mixing of old and new water (Fig. 3.7e), muting any growth, drip rate, or oxygen isotope response. Thus, for paleoclimatology studies in temperate deep caves, the ideal speleothem would be one that is fed by a drip site that can be classified by modern data collection as intermediate to conduit-type, rather than diffuse. It is important to note that the drip site characterization can change through time as flow paths in the epikarst form and are filled, and thus a site classified as conduit in the modern may have been classified differently in the past. However, modern observation and classification of drip sites can be used to initially select potential speleothems for paleoclimate studies.

DRIP WATER RESIDENCE TIME MODEL

The drip water residence time model supports the classifications of each site. The modeled average drip water residence time for conduit sites is 18 months, for intermediate sites it is 27 months, and for diffuse sites it is 34.5 months (Fig. 3.7e). It is important to note the RMSE of each best-fit residence time model is never below 0.196, where a smaller RMSE is better (values ranging between 0 and 1). Given the simplicity of this model, a weighted running mean rainwater model to predict something as complex as cave drip water, it is not unexpected that the accuracy of the modeled values as compared to the measured drip water $\delta^{18}O$ is low, based on the RMSE, in some cases. First, it is unlikely that the sites are only fed by local precipitation. In addition to local precipitation municipal water could also be entering the cave. To determine the presence or absence of municipal water, the drip water could be analyzed for non-natural isotopes and compounds, including but not limited to heavy metals, pharmaceuticals, nitrates from human waste, or strontium isotope ratios (Christian et al., 2011). There is also the fact that the rainwater $\delta^{18}O$ values were all based on rain that fell in Austin, TX. The caves studied vary in distance from Austin, and thus there may be some isotopic variation between the rainfall at each location from the same storm. However, based on findings by Rozanski et al. (1992) concerning isotopic patterns in global precipitation and how they vary over large distances, it is likely that any isotopic difference based on distance the cave is from Austin is minimal, no more than ±0.2‰.

CONCEPTUAL SPELEOTHEM MODEL

Using the findings described above, and the method described in Chapter 2, a hypothetical, deep cave, temperate speleothem oxygen isotope time series (Fig. 4.1) was created, including an average year, a drought year, a hurricane year, and a wet autumn year.

Temperature was assumed to be constant at 20°C to keep the setting of calcite precipitation constant. Growth rate patterns observed in deep central Texas caves (Banner et al., 2007) were taken into consideration, and a hypothetical speleothem calcite record including periods of slow growth, mirroring the observed seasonal calcite growth pattern common to the region, was created. The resulting synthetic speleothem record shows the ideal temperate deep cave isotopic and growth-rate response to the studied extreme events (Fig. 4.2). However, it is important to note that which $\delta^{18}O$ signature is visible in the sampled calcite, and the degree of variation between measurements, depends at least partially on the spatial resolution of the sampling. Exactly which signals will appear is difficult to estimate, as the amount of growth varies between speleothems. The same spatial resolution on two different speleothems may see some or none of the events. In fact, the amount of growth may vary on a single speleothem, further complicating the issue.

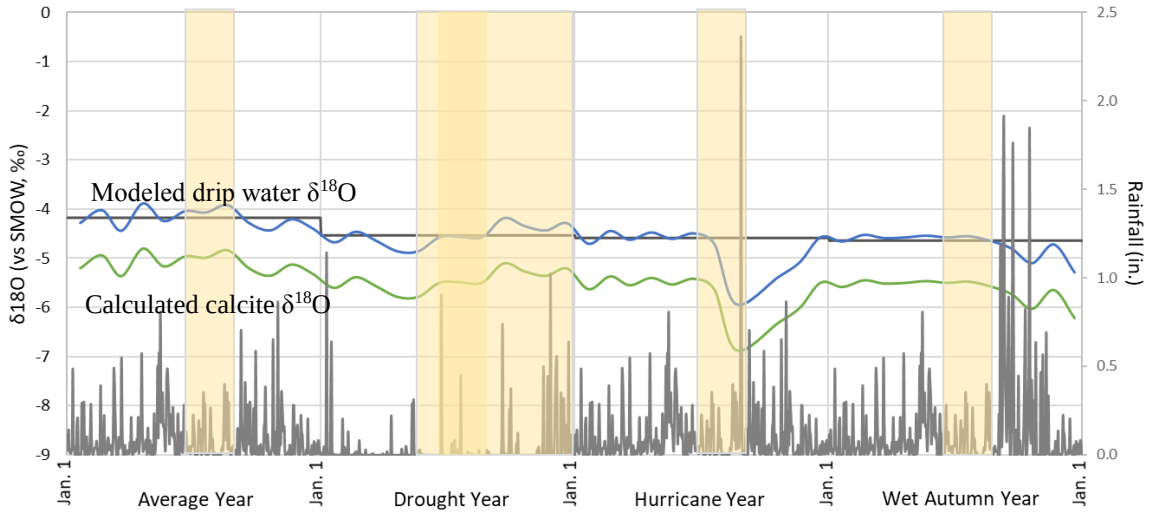

Fig. 4.1: The conceptual modeled drip water oxygen isotope values (in blue) for a time period including average, drought, hurricane, and wet autumn years. Modeled calcite values (green) were calculated assuming a constant temperature of 20°C. The background grey line shows the average drip water isotopic value over the course of the year, and the yellow vertical bars indicate periods of slow/no calcite growth.

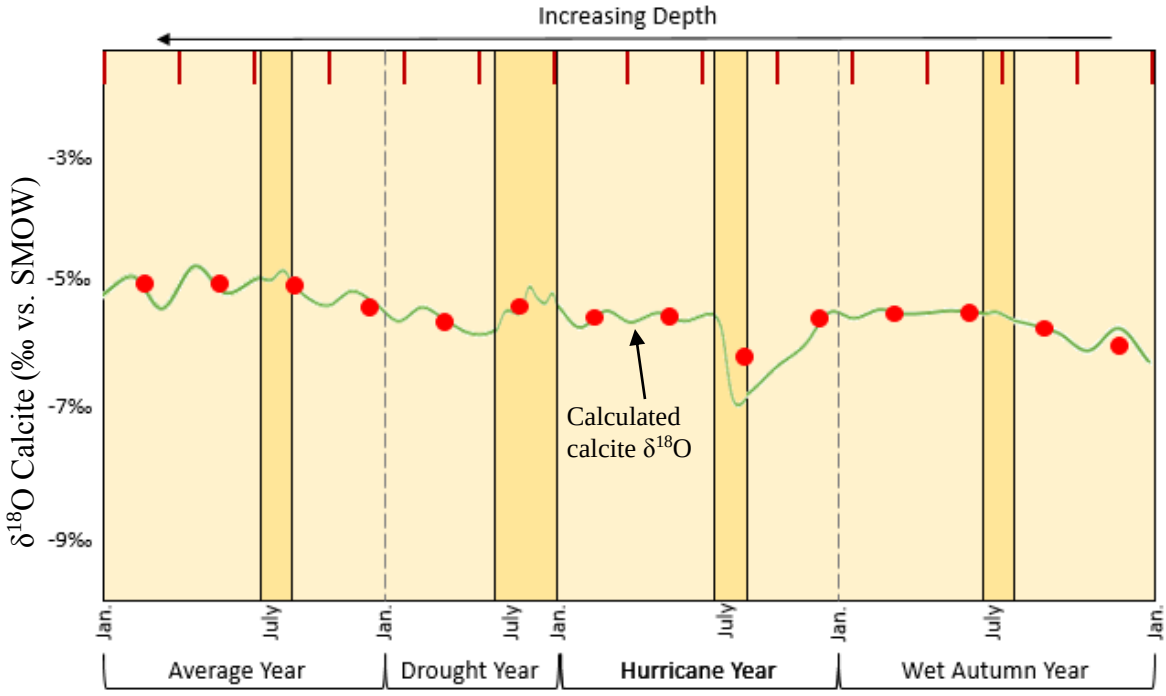

Fig. 4.2: Conceptual intermediate to conduit deep-cave, temperate speleothem core showing both fast (pale yellow) and slow (dark yellow) growth bands over a period including average, drought, hurricane, and wet autumn years. For comparison, the slow growth band in the average year begins mid-June and lasts through the end of August. The oxygen isotope value of the calcite is the green time series. Each year is separated by a dashed grey bar, with the beginning of January and July marked across the bottom of the speleothem core. The red dots indicate the average calcite $\delta^{18}O$ value of calcite between the equidistant red tick marks (showing some arbitrary distance, depending on the growth rate of the speleothem), and how the record may appear if the speleothem was sampled and then analyzed.

LIMITATIONS

The major limitation of using speleothems to identify past extreme weather events is that not every extreme event will influence every cave, and not every site will record every event. The nature of speleothem drip sites can change over time (i.e. change from conduit to diffuse or vice versa), which immediately makes determining which speleothems may preserve extreme events difficult. Events with a short range of influence,

both spatial and temporal, may also not be preserved. Therefore, although water from Hurricane Harvey appeared in most of the studied caves to some degree it may not actually be recorded in a sampleable volume of calcite, so that is another limitation. For oxygen isotope analysis in an isotope ratio mass spectrometer, about 100 μg of calcite powder is required. How wide a calcite growth band needs to be in order to be sampleable depends on the density of the calcite and thus varies site to site. Depending on the tools available, sampleable bands may be down to millimeters in width. Slower growing speleothems are less likely to record short events, and in some speleothems only events lasting on the decadal scale may be visible both isotopically and in calcite growth band widths (i.e. a megadrought or extended period with multiple hurricanes) (Jo et al., 2010).

IMPLICATIONS FOR PALEOCLIMATOLOGY

The sites used in this study are located mostly in deep temperate caves that are subject to high summer CO_2 levels and lower winter CO_2 levels, and thus seasonal speleothem calcite growth (Banner et al., 2007). Thus, these findings are most applicable to caves in temperate zones where summer events are less likely to be preserved in the speleothem record. Not all areas that fit these criteria will be subject to the kind of major climatic events described in this study, especially hurricanes. The findings of this study further indicate that intermediate to conduit-type sites are the most likely to preserve more short-term (i.e. less than a year in length) extreme climatic events

In this study, sites fitting these criteria showed the following responses. Multi-month droughts are characterized by low drip rates with little variation, and are likely to be preserved as anomalously long periods of slow growth (year-length or longer) with no associated isotopic response. Large storm events, such as hurricanes, are shown by short-term drip rate highs, no growth rate response, and either a delayed isotopic peak as ^{18}O

enriched water is forced out of the epikarst or an abrupt isotopic decrease followed by a slow (multi-month) return to the baseline isotopic value. They are most likely to be preserved as a historically low value followed by a slow rise in isotopic values. Wet periods, on the multi-month scale, are indicated by increased drip rates. These events may be preserved as a slightly higher growth band than average, and a lower isotopic value than average, after several months of higher than average rainfall. This response is the most difficult to identify as being related to an extreme event, as it may easily be construed as the normal variability present in speleothems. However, not all events may be preserved, especially in speleothems that grow more slowly. Summer events are also less likely to be preserved in temperate speleothems, and the shorter the duration of the event the less likely it is to be preserved.

FUTURE WORK

Several research paths are available to build upon these conclusions. Speleothem calcite from the chosen sites across the studied time period should be analyzed for stable oxygen isotopes in order to determine if the measured calcite matches the modeled calcite. Performing a study similar to the one described here in other deep temperate caves around the world would also be helpful in determining if the conclusions reached are universal or area-specific. Comparing multiple hurricane or drought events and their effects on the same sites would also be beneficial in testing the conclusions drawn here as the common or ideal response to these extreme events. Tracer tests of water of a known isotopic value can also be run, though the logistics of this may be difficult. The current data can also be looked at in more detail. In addition to Hurricane Harvey, other large rain events, which may have had equivalent or greater rainfall than Hurricane Harvey, impacted the area during the study period (2010-2018). It would be interesting to see the differences in

response to a hurricane and a non-hurricane large rain event, and how these may be preserved in the calcite record. Using the observed responses and cross-correlation analysis to determine lag times between events and the observed responses would also be interesting, and give more insight into the cave hydrologic system. Further statistical tests to analyze the significance of the observed drip rate, calcite growth rate, and $\delta^{18}O$ values would also be valuable.

Conclusions

In conclusion, if seeking to use a temperate deep-cave speleothem as a paleoclimate proxy, a speleothem that is supplied by a conduit to intermediate-type drip flow path is the most likely to preserve the extreme climatic events. Multi-month droughts are likely to be preserved as anomalously long periods of slow growth (year-length or longer) with no associated isotopic response. Large storm events, such as hurricanes are most likely to be preserved as a historically low value followed by a slow rise in isotopic values. Multi-month wet periods may be preserved as a slightly higher growth band than average with a lower isotopic value than average. However, not all events may be preserved, especially in speleothems that grow more slowly. Summer events are also less likely to be preserved in temperate speleothems, and the shorter the duration of the event the less likely it is to be preserved.

Appendices

APPENDIX A- BACKGROUND

Table A1: Cave drip water δ18O values (‰ vs. SMOW), including replicates, 2010-2018.

Site	Date	δ18O
ISST Rear	11/6/2016	-4.73
ISST Rear	12/6/2016	-4.98
ISST Rear	1/3/2017	-4.89
ISST Rear	1/3/2017	-4.90
ISST Rear	2/5/2017	-4.84
ISST Rear	3/5/2017	-4.83
ISST Rear	4/23/2017	-4.82
ISST Rear	5/19/2017	-4.84
ISST Rear	6/22/2017	-4.73
ISST Rear	7/25/2017	-4.85
ISST Rear	9/6/2017	-4.96
ISST Rear	9/10/2017	-4.90
ISST Rear	9/23/2017	-4.37
ISST Rear	10/7/2017	-4.91
ISST Rear	10/28/2017	-4.71
ISST Rear	11/19/2017	-4.37
ISST Rear	12/21/2017	-4.78
ISST Rear	1/20/2018	-4.85
ISST Rear	2/24/2018	-4.49
ISST Rear	3/31/2018	-4.88
ISST Rear	4/21/2018	-4.88
ISST Rear	5/24/2018	-4.86
ISST Rear	6/25/2018	-4.73
ISST Rear	7/23/2018	-4.81
ISST Rear	9/1/2018	-4.84
ISST Rear	10/6/2018	-4.83
ISST Rear	11/3/2018	-4.72
ISST Rear	12/12/2018	-4.83
ISLM Rear	2/26/2010	-4.14
ISLM Rear	3/27/2010	-4.48
ISLM Rear	5/30/2010	-4.53
ISLM Rear	7/29/2010	-4.23
ISLM Rear	9/26/2010	-4.65
ISLM Rear	11/30/2010	-4.74
ISLM Rear	12/16/2010	-4.94
ISLM Rear	5/15/2011	-5.74
ISLM Rear	7/14/2011	-4.50
ISLM Rear	9/11/2011	-4.18

Site	Date	δ18O
ISSR3	2/5/2017	-4.37
ISSR3	3/5/2017	-4.49
ISSR3	4/23/2017	-4.31
ISSR3	5/19/2017	-4.64
ISSR3	6/22/2017	-4.34
ISSR3	7/25/2017	-4.44
ISSR3	8/29/2017	-4.70
ISSR3	9/6/2017	-4.54
ISSR3	9/10/2017	-4.48
ISSR3	9/14/2017	-4.54
ISSR3	9/23/2017	-3.87
ISSR3	10/7/2017	-4.52
ISSR3	10/28/2017	-4.01
ISSR3	11/19/2017	-3.96
ISSR3	12/21/2017	-4.48
ISSR3	1/20/2018	-4.47
ISSR3	2/24/2018	-4.51
ISSR3	3/31/2018	-4.55
ISSR3	4/21/2018	-4.47
ISSR3	5/24/2018	-4.43
ISSR3	6/25/2018	-4.49
ISSR3	7/23/2018	-4.46
ISSR3	9/1/2018	-4.18
ISSR3	10/6/2018	-5.12
ISSR3	12/12/2018	-4.40
ISSR5	10/8/2016	-4.51
ISSR5	11/6/2016	-4.45
ISSR5	12/6/2016	-4.56
ISSR5	1/3/2017	-4.58
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ISSR5	3/5/2017	-4.52
ISSR5	4/23/2017	-4.52
ISSR5	5/19/2017	-4.49
ISSR5	6/22/2017	-4.51
ISSR5	7/25/2017	-4.37
ISSR5	9/6/2017	-4.48
ISSR5	9/10/2017	-4.54

Site	Date	δ18O
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NBWS	10/27/2013	-4.23
NBWS	11/23/2013	-4.04
NBWS	12/17/2013	-3.90
NBWS	1/10/2014	-4.23
NBWS	1/10/2014	-4.21
NBWS	2/9/2014	-4.29
NBWS	3/23/2014	-4.28
NBWS	5/25/2014	-4.29
NBWS	7/18/2014	-4.29
NBWS	11/1/2014	-4.35
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NBWS	4/22/2017	-4.58
NBWS	5/18/2017	-4.59
NBWS	6/13/2017	-4.66
NBWS	7/22/2017	-4.58
NBWS	8/31/2017	-5.94

ISLM Rear	12/20/2011	-4.36
ISLM Rear	1/29/2012	-4.59
ISLM Rear	3/3/2012	-4.64
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ISLM Rear	9/9/2012	-4.05
ISLM Rear	10/14/2012	-4.42
ISLM Rear	11/17/2012	-4.44
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ISLM Rear	5/29/2014	-4.60
ISLM Rear	5/29/2014	-4.36
ISLM Rear	7/22/2014	-4.37
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ISLM Rear	8/20/2014	-4.80
ISLM Rear	10/31/2014	-4.46
ISLM Rear	12/13/2014	-4.53
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ISLM Rear	2/21/2015	-4.61
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ISLM Rear	12/6/2016	-4.63
ISLM Rear	1/3/2017	-4.86
ISLM Rear	2/5/2017	-4.64
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ISLM Rear	4/23/2017	-4.68
ISLM Rear	5/19/2017	-4.69
ISLM Rear	6/22/2017	-4.62
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ISSR5	9/23/2017	-3.94
ISSR5	10/7/2017	-4.49
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ISSR5	11/19/2017	-4.03
ISSR5	12/21/2017	-3.97
ISSR5	1/20/2018	-4.53
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ISSR5	7/23/2018	-4.48
ISSR5	7/23/2018	-4.48
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ISSR5	10/6/2018	-4.61
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ISHW	1/3/2017	-4.72
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ISHW	9/6/2017	-4.83
ISHW	9/14/2017	-4.80
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ISHW	9/23/2017	-4.20
ISHW	10/7/2017	-4.80
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ISHW	12/12/2018	-4.57
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ISSR7	8/31/2010	-4.99
NBWS	10/7/2017	-5.38
NBWS	11/18/2017	-5.08
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NBWS	8/3/2018	-4.78
NBWS	9/21/2018	-4.80
NBWS	10/20/2018	-5.10
NBWS	11/10/2018	-4.72
NBWS	11/10/2018	-4.79
NBWS	12/1/2018	-5.29
CWNBD	7/21/2013	-3.16
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CWNBD	5/7/2014	-3.35
CWNBD	7/16/2014	-3.06
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CWNBD	4/23/2016	-4.31
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CWNBD	4/8/2017	-4.51
CWNBD	5/9/2017	-4.54

ISLM Rear	9/6/2017	-4.79
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ISSR7	6/9/2016	-4.55
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ISSR7	12/21/2017	-5.08
CWNBD	6/9/2017	-4.57
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CWNBD	8/4/2017	-4.49
CWNBD	9/17/2017	-4.40
CWNBD	11/26/2017	-4.50
CWNBD	12/20/2017	-4.62
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CWNBD	6/11/2018	-4.56
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CWNBD	10/27/2018	-4.82
CWNBD	11/30/2018	-5.04
CWNBD	12/22/2018	-5.29
CWNHoW	9/14/2013	-2.80
CWNHoW	11/17/2013	-1.90
CWNHoW	12/20/2013	-2.20
CWNHoW	2/1/2014	-1.39
CWNHoW	2/28/2014	-1.81
CWNHoW	5/7/2014	-2.45
CWNHoW	6/19/2014	-2.24
CWNHoW	7/16/2014	-2.65
CWNHoW	8/27/2014	-2.82
CWNHoW	9/28/2014	-2.69
CWNHoW	10/25/2014	-2.50
CWNHoW	4/4/2015	-2.38
CWNHoW	6/30/2015	-2.90
CWNHoW	8/13/2015	-2.94
CWNHoW	11/8/2015	-3.52
CWNHoW	12/11/2015	-3.21
CWNHoW	1/21/2017	-4.21
CWNHoW	1/21/2017	-4.71
CWNHoW	2/11/2017	-3.83
CWNHoW	4/8/2017	-4.08
CWNHoW	6/9/2017	-4.19
CWNHoW	8/4/2017	-3.66
CWNHoW	11/26/2017	-4.00
CWNHoW	12/20/2017	-4.09
CWNHoW	1/15/2018	-3.78
CWNHoW	2/3/2018	-3.74
CWNHoW	3/3/2018	-3.79
CWNHoW	4/5/2018	-3.97
CWNHoW	5/12/2018	-3.94
CWNHoW	6/11/2018	-4.04

ISSR3	3/3/2012	-4.91
ISSR3	4/4/2012	-2.83
ISSR3	4/7/2012	-4.21
ISSR3	4/7/2012	-3.80
ISSR3	4/15/2012	-0.20
ISSR3	5/15/2012	-4.20
ISSR3	6/28/2012	-4.59
ISSR3	6/28/2012	-3.63
ISSR3	8/2/2012	-4.47
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ISSR3	10/14/2012	-5.01
ISSR3	11/17/2012	-4.26
ISSR3	12/17/2012	-4.27
ISSR3	1/20/2013	-4.27
ISSR3	2/17/2013	-4.40
ISSR3	3/17/2013	-4.44
ISSR3	3/17/2013	-4.17
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ISSR3	8/15/2013	-4.06
ISSR3	9/29/2013	-4.05
ISSR3	10/19/2013	-4.18
ISSR3	11/16/2013	-4.20
ISSR3	11/16/2013	-4.10
ISSR3	12/16/2013	-4.31
ISSR3	1/20/2014	-4.26
ISSR3	1/20/2014	-4.28
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ISSR3	12/10/2015	-4.46
ISSR7	1/20/2018	-4.76
ISSR7	2/24/2018	-4.12
ISSR7	3/31/2018	-4.31
ISSR7	3/31/2018	-4.50
ISSR7	4/21/2018	-4.60
ISSR7	5/24/2018	-3.77
ISSR7	6/25/2018	-4.26
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NBFE	8/31/2017	-5.45
NBFE	10/7/2017	-4.87
NBFE	11/18/2017	-4.52
NBFE	12/22/2017	-5.21
NBFE	1/11/2018	-5.04
NBFE	2/11/2018	-4.84
NBFE	3/14/2018	-4.85
NBFE	4/15/2018	-4.57
NBFE	5/23/2018	-4.73
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NBFE	11/18/2018	-4.93
NBFE	12/1/2018	-4.97
NBWS	9/16/2012	-4.02
CWNHoW	7/13/2018	-4.19
CWNHoW	8/10/2018	-4.12
CWNHoW	9/29/2018	-4.76
CWNHoW	10/27/2018	-4.04
CWNHoW	11/30/2018	-3.60
CWNHoW	12/22/2018	-3.82
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WC-3	7/24/2014	-4.49
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WC-3	7/12/2015	-4.55
WC-3	10/17/2015	-4.78
WC-3	1/15/2016	-4.74
WC-3	5/6/2016	-4.29
WC-3	12/3/2016	-4.71
WC-3	1/31/2017	-4.94
WC-3	2/25/2017	-4.90
WC-3	4/1/2017	-4.86
WC-3	5/6/2017	-4.72
WC-3	6/21/2017	-4.67
WC-3	8/9/2017	-5.01
WC-3	9/15/2017	-4.62

ISSR3	12/10/2015	-4.10
ISSR3	2/6/2016	-4.05
ISSR3	4/9/2016	-4.40
ISSR3	6/9/2016	-4.35
ISSR3	8/11/2016	-4.26
ISSR3	10/8/2016	-4.19
ISSR3	12/6/2016	-4.24
ISSR3	1/3/2017	-4.52
ISSR3	1/3/2017	-4.55

NBWS	9/16/2012	-4.07
NBWS	10/20/2012	-4.62
NBWS	11/18/2012	-4.51
NBWS	12/13/2012	-4.48
NBWS	1/17/2013	-4.49
NBWS	2/26/2013	-4.45
NBWS	3/21/2013	-4.45
NBWS	4/14/2013	-4.48
NBWS	5/9/2013	-4.49

WC-3	10/30/2017	-4.85
WC-3	12/10/2017	-4.85
WC-3	1/30/2018	-4.93
WC-3	3/2/2018	-4.94
WC-3	4/12/2018	-4.17
WC-3	9/15/2018	-4.61
WC-3	9/15/2018	-4.73
WC-3	10/12/2018	-5.03
WC-3	12/19/2018	-5.00

Fig. A1: Aerial view of Inner Space Cavern, showing proximity of interstate 35 (30.6079711, -97.6881177). Figure modified from Google Earth. Entrance to the cave is indicated by the red dot.

Fig. A2: Aerial view of Natural Bridge Caverns (29.69334645,-98.3392661). Entrance to the south cave is indicated by the red dot. Figure modified from Google Earth.

Fig. A3: Aerial view of Cave without a Name (29.8862965,-98.6197328), entrance to the cave is marked by the red dot. Figure modified from Google Earth.

Fig. A4: Aerial view of Westcave Preserve (30.3390623, -98.1409312). Cave entrance is indicated by the red dot. Figure modified from Google Earth.

Table A2: Rainfall values (in inches) used for the caves studied. Inner Space Cavern, collected at NOAA station Georgetown 1.2 W, TX US. Natural Bridge Caverns, collected at NOAA station New Braunfels 3.1 WNW, TX US. Cave without a Name, collected at NOAA station Boerne 0.7 N, TX US. Westcave Preserve, collected at NOAA stations Spicewood 6.5 S, TX US; Dripping Springs 10.9 NNW, TX US; Cypress Mills 3.1 SE; and Dripping Springs 2.8 NNW, TX US. Data courtesy of NOAA and supplemented by Weather Underground.

Inner Space		Natural Bridge		Cave without a Name		Westcave	
Date	Rainfall	Date	Rainfall	Date	Rainfall	Date	Rainfall
1/1/2010	0	1/1/2010	0	1/1/2010	0	1/1/2010	0
1/2/2010	0	1/2/2010	0	1/2/2010	0	1/2/2010	0
1/3/2010	0	1/3/2010	0	1/3/2010	0	1/3/2010	0
1/4/2010	0	1/4/2010	0	1/4/2010	0	1/4/2010	0
1/5/2010	0	1/5/2010	0	1/5/2010	0	1/5/2010	0
1/6/2010	0	1/6/2010	0	1/6/2010	0	1/6/2010	0
1/7/2010	0	1/7/2010	0.01	1/7/2010	0	1/7/2010	0
1/8/2010	0	1/8/2010	0	1/8/2010	0	1/8/2010	0
1/9/2010	0	1/9/2010	0	1/9/2010	0	1/9/2010	0
1/10/2010	0	1/10/2010	0	1/10/2010	0	1/10/2010	0
1/11/2010	0	1/11/2010	0	1/11/2010	0	1/11/2010	0
1/12/2010	0	1/12/2010	0	1/12/2010	0	1/12/2010	0
1/13/2010	0	1/13/2010	0	1/13/2010	0	1/13/2010	0
1/14/2010	0	1/14/2010	0.14	1/14/2010	0.16	1/14/2010	0
1/15/2010	0.65	1/15/2010	1.36	1/15/2010	1.24	1/15/2010	0.76
1/16/2010	1.33	1/16/2010	0.91	1/16/2010	1.26	1/16/2010	1.46
1/17/2010	0	1/17/2010	0	1/17/2010	0	1/17/2010	0
1/18/2010	0	1/18/2010	0	1/18/2010	0	1/18/2010	0
1/19/2010	0	1/19/2010	0.01	1/19/2010	0	1/19/2010	0
1/20/2010	0.05	1/20/2010	0.02	1/20/2010	0.04	1/20/2010	0.03
1/21/2010	0	1/21/2010	0	1/21/2010	0	1/21/2010	0
1/22/2010	0	1/22/2010	0	1/22/2010	0	1/22/2010	0
1/23/2010	0	1/23/2010	0	1/23/2010	0	1/23/2010	0
1/24/2010	0	1/24/2010	0	1/24/2010	0	1/24/2010	0
1/25/2010	0	1/25/2010	0	1/25/2010	0	1/25/2010	0
1/26/2010	0	1/26/2010	0	1/26/2010	0	1/26/2010	0
1/27/2010	0	1/27/2010	0	1/27/2010	0	1/27/2010	0
1/28/2010	1.75	1/28/2010	0.14	1/28/2010	0.21	1/28/2010	0.25

1/29/2010	0.15	1/29/2010	0.42	1/29/2010	1.58	1/29/2010	0.32
1/30/2010	0	1/30/2010	0.04	1/30/2010	0.03	1/30/2010	0
1/31/2010	0	1/31/2010	0	1/31/2010	0	1/31/2010	0
2/1/2010	0	2/1/2010	0.02	2/1/2010	0	2/1/2010	0
2/2/2010	0	2/2/2010	0.06	2/2/2010	0.03	2/2/2010	0
2/3/2010	0.25	2/3/2010	0.53	2/3/2010	1.23	2/3/2010	0.68
2/4/2010	0.8	2/4/2010	1.28	2/4/2010	1.41	2/4/2010	0.24
2/5/2010	1.08	2/5/2010	0.28	2/5/2010	0.41	2/5/2010	0
2/6/2010	0	2/6/2010	0	2/6/2010	0	2/6/2010	0
2/7/2010	0	2/7/2010	0	2/7/2010	0	2/7/2010	0
2/8/2010	0	2/8/2010	0.04	2/8/2010	0.14	2/8/2010	0.18
2/9/2010	0.36	2/9/2010	0.26	2/9/2010	0.22	2/9/2010	0
2/10/2010	0	2/10/2010	0	2/10/2010	0	2/10/2010	0
2/11/2010	0.09	2/11/2010	0.41	2/11/2010	0.19	2/11/2010	0.2
2/12/2010	0.46	2/12/2010	0.57	2/12/2010	0.53	2/12/2010	0
2/13/2010	0	2/13/2010	0	2/13/2010	0	2/13/2010	0
2/14/2010	0	2/14/2010	0	2/14/2010	0	2/14/2010	0
2/15/2010	0	2/15/2010	0.03	2/15/2010	0.04	2/15/2010	0
2/16/2010	0	2/16/2010	0	2/16/2010	0	2/16/2010	0
2/17/2010	0	2/17/2010	0	2/17/2010	0	2/17/2010	0
2/18/2010	0	2/18/2010	0	2/18/2010	0	2/18/2010	0
2/19/2010	0	2/19/2010	0	2/19/2010	0	2/19/2010	0
2/20/2010	0	2/20/2010	0	2/20/2010	0	2/20/2010	0
2/21/2010	0.02	2/21/2010	0.03	2/21/2010	0.03	2/21/2010	0.02
2/22/2010	0	2/22/2010	0	2/22/2010	0	2/22/2010	0
2/23/2010	0.46	2/23/2010	0.02	2/23/2010	0.32	2/23/2010	0.13
2/24/2010	0	2/24/2010	0.21	2/24/2010	0.17	2/24/2010	0
2/25/2010	0	2/25/2010	0	2/25/2010	0	2/25/2010	0
2/26/2010	0	2/26/2010	0	2/26/2010	0	2/26/2010	0
2/27/2010	0	2/27/2010	0	2/27/2010	0	2/27/2010	0
2/28/2010	0	2/28/2010	0	2/28/2010	0	2/28/2010	0
3/1/2010	0.47	3/1/2010	0.59	3/1/2010	0.45	3/1/2010	0.08
3/2/2010	0.32	3/2/2010	0.02	3/2/2010	0	3/2/2010	0
3/3/2010	0	3/3/2010	0	3/3/2010	0	3/3/2010	0
3/4/2010	0	3/4/2010	0	3/4/2010	0	3/4/2010	0
3/5/2010	0	3/5/2010	0	3/5/2010	0	3/5/2010	0
3/6/2010	0	3/6/2010	0	3/6/2010	0	3/6/2010	0
3/7/2010	0	3/7/2010	0	3/7/2010	0.02	3/7/2010	0.05

3/8/2010	0.13	3/8/2010	0.08	3/8/2010	0.57	3/8/2010	0.27
3/9/2010	1.23	3/9/2010	0.07	3/9/2010	0.03	3/9/2010	0
3/10/2010	0	3/10/2010	0	3/10/2010	0	3/10/2010	0
3/11/2010	0	3/11/2010	0	3/11/2010	0	3/11/2010	0
3/12/2010	0	3/12/2010	0	3/12/2010	0	3/12/2010	0
3/13/2010	0	3/13/2010	0	3/13/2010	0	3/13/2010	0
3/14/2010	0	3/14/2010	0	3/14/2010	0	3/14/2010	0
3/15/2010	0	3/15/2010	0	3/15/2010	0	3/15/2010	0
3/16/2010	0.35	3/16/2010	0.24	3/16/2010	0.84	3/16/2010	0.79
3/17/2010	0.62	3/17/2010	0.14	3/17/2010	0.12	3/17/2010	0
3/18/2010	0	3/18/2010	0	3/18/2010	0	3/18/2010	0
3/19/2010	0	3/19/2010	0	3/19/2010	0	3/19/2010	0
3/20/2010	0.56	3/20/2010	0.51	3/20/2010	0.62	3/20/2010	0.55
3/21/2010	0.2	3/21/2010	0.02	3/21/2010	0	3/21/2010	0
3/22/2010	0	3/22/2010	0	3/22/2010	0	3/22/2010	0
3/23/2010	0	3/23/2010	0	3/23/2010	0	3/23/2010	0
3/24/2010	0.1	3/24/2010	0	3/24/2010	0.04	3/24/2010	0.04
3/25/2010	0.5	3/25/2010	0.56	3/25/2010	0.22	3/25/2010	0
3/26/2010	0	3/26/2010	0	3/26/2010	0	3/26/2010	0
3/27/2010	0	3/27/2010	0	3/27/2010	0	3/27/2010	0
3/28/2010	0	3/28/2010	0	3/28/2010	0	3/28/2010	0
3/29/2010	0	3/29/2010	0	3/29/2010	0	3/29/2010	0
3/30/2010	0	3/30/2010	0	3/30/2010	0	3/30/2010	0
3/31/2010	0	3/31/2010	0	3/31/2010	0	3/31/2010	0
4/1/2010	0	4/1/2010	0	4/1/2010	0	4/1/2010	0
4/2/2010	0	4/2/2010	0	4/2/2010	0	4/2/2010	0.02
4/3/2010	0	4/3/2010	0	4/3/2010	0.01	4/3/2010	0
4/4/2010	0	4/4/2010	0.04	4/4/2010	0.03	4/4/2010	0
4/5/2010	0	4/5/2010	0	4/5/2010	0	4/5/2010	0
4/6/2010	0	4/6/2010	0	4/6/2010	0	4/6/2010	0
4/7/2010	0	4/7/2010	0	4/7/2010	0	4/7/2010	0
4/8/2010	0	4/8/2010	0.02	4/8/2010	0.17	4/8/2010	0
4/9/2010	0	4/9/2010	0	4/9/2010	0	4/9/2010	0
4/10/2010	0	4/10/2010	0	4/10/2010	0	4/10/2010	0
4/11/2010	0	4/11/2010	0.02	4/11/2010	0.01	4/11/2010	0
4/12/2010	0.03	4/12/2010	0	4/12/2010	0.02	4/12/2010	0
4/13/2010	0	4/13/2010	0	4/13/2010	0	4/13/2010	0
4/14/2010	0	4/14/2010	0	4/14/2010	0.01	4/14/2010	0.03

4/15/2010	0	4/15/2010	0.11	4/15/2010	0.14	4/15/2010	0.5
4/16/2010	0.58	4/16/2010	0.54	4/16/2010	1.29	4/16/2010	0
4/17/2010	0.06	4/17/2010	0.24	4/17/2010	1.2	4/17/2010	0.16
4/18/2010	0.33	4/18/2010	0.34	4/18/2010	0.45	4/18/2010	0
4/19/2010	0	4/19/2010	0	4/19/2010	0	4/19/2010	0
4/20/2010	0	4/20/2010	0	4/20/2010	0	4/20/2010	0
4/21/2010	0	4/21/2010	0	4/21/2010	0	4/21/2010	0
4/22/2010	0	4/22/2010	0	4/22/2010	0	4/22/2010	0.01
4/23/2010	0.13	4/23/2010	0.03	4/23/2010	0	4/23/2010	0.53
4/24/2010	0.35	4/24/2010	0.04	4/24/2010	0.21	4/24/2010	0.04
4/25/2010	0	4/25/2010	0	4/25/2010	0	4/25/2010	0
4/26/2010	0	4/26/2010	0	4/26/2010	0	4/26/2010	0
4/27/2010	0	4/27/2010	0	4/27/2010	0	4/27/2010	0
4/28/2010	0	4/28/2010	0	4/28/2010	0	4/28/2010	0
4/29/2010	0	4/29/2010	0	4/29/2010	0	4/29/2010	0
4/30/2010	0	4/30/2010	0	4/30/2010	0	4/30/2010	0.01
5/1/2010	0	5/1/2010	0	5/1/2010	0	5/1/2010	0
5/2/2010	0	5/2/2010	0.01	5/2/2010	0	5/2/2010	0
5/3/2010	0	5/3/2010	0	5/3/2010	0	5/3/2010	0
5/4/2010	0	5/4/2010	0	5/4/2010	0	5/4/2010	0
5/5/2010	0	5/5/2010	0	5/5/2010	0	5/5/2010	0
5/6/2010	0	5/6/2010	0	5/6/2010	0	5/6/2010	0
5/7/2010	0	5/7/2010	0	5/7/2010	0	5/7/2010	0
5/8/2010	0	5/8/2010	0	5/8/2010	0	5/8/2010	0
5/9/2010	0	5/9/2010	0	5/9/2010	0	5/9/2010	0
5/10/2010	0	5/10/2010	0	5/10/2010	0	5/10/2010	0
5/11/2010	0	5/11/2010	0	5/11/2010	0	5/11/2010	0
5/12/2010	0	5/12/2010	0	5/12/2010	0	5/12/2010	0
5/13/2010	0	5/13/2010	0	5/13/2010	0	5/13/2010	0
5/14/2010	0	5/14/2010	0.01	5/14/2010	1.7	5/14/2010	0.32
5/15/2010	0.77	5/15/2010	3.81	5/15/2010	3.98	5/15/2010	0.48
5/16/2010	0	5/16/2010	0	5/16/2010	0	5/16/2010	0
5/17/2010	0	5/17/2010	0	5/17/2010	0.02	5/17/2010	0.14
5/18/2010	0.07	5/18/2010	0.53	5/18/2010	1.05	5/18/2010	0
5/19/2010	0	5/19/2010	0	5/19/2010	0	5/19/2010	0
5/20/2010	0	5/20/2010	0	5/20/2010	0.01	5/20/2010	0
5/21/2010	0	5/21/2010	0	5/21/2010	0	5/21/2010	0
5/22/2010	0	5/22/2010	0	5/22/2010	0	5/22/2010	0

5/23/2010	0	5/23/2010	0	5/23/2010	0	5/23/2010	0
5/24/2010	0	5/24/2010	0	5/24/2010	0	5/24/2010	0
5/25/2010	0	5/25/2010	0	5/25/2010	0.04	5/25/2010	0
5/26/2010	0	5/26/2010	1.27	5/26/2010	0.04	5/26/2010	0
5/27/2010	0	5/27/2010	0	5/27/2010	0	5/27/2010	0
5/28/2010	0	5/28/2010	0	5/28/2010	0	5/28/2010	0
5/29/2010	0	5/29/2010	0	5/29/2010	0	5/29/2010	0
5/30/2010	0.36	5/30/2010	0	5/30/2010	0	5/30/2010	0
5/31/2010	0	5/31/2010	0	5/31/2010	0	5/31/2010	0
6/1/2010	0	6/1/2010	0	6/1/2010	0	6/1/2010	0
6/2/2010	0	6/2/2010	0	6/2/2010	0	6/2/2010	0.42
6/3/2010	0.65	6/3/2010	0.39	6/3/2010	0.7	6/3/2010	0
6/4/2010	0.08	6/4/2010	0.11	6/4/2010	0	6/4/2010	0
6/5/2010	0	6/5/2010	0	6/5/2010	0	6/5/2010	0
6/6/2010	0	6/6/2010	0	6/6/2010	0	6/6/2010	0
6/7/2010	0	6/7/2010	0	6/7/2010	0	6/7/2010	0
6/8/2010	0	6/8/2010	0	6/8/2010	0.25	6/8/2010	0
6/9/2010	1.24	6/9/2010	1.57	6/9/2010	0.75	6/9/2010	0
6/10/2010	0.32	6/10/2010	0	6/10/2010	0.02	6/10/2010	0
6/11/2010	0	6/11/2010	0	6/11/2010	0	6/11/2010	0
6/12/2010	0	6/12/2010	0	6/12/2010	0	6/12/2010	0
6/13/2010	0.04	6/13/2010	0	6/13/2010	0	6/13/2010	0
6/14/2010	0	6/14/2010	0	6/14/2010	0	6/14/2010	0
6/15/2010	0	6/15/2010	0	6/15/2010	0	6/15/2010	0
6/16/2010	0	6/16/2010	0	6/16/2010	0	6/16/2010	0
6/17/2010	0	6/17/2010	0	6/17/2010	0	6/17/2010	0
6/18/2010	0	6/18/2010	0	6/18/2010	0	6/18/2010	0
6/19/2010	0	6/19/2010	0.03	6/19/2010	0	6/19/2010	0
6/20/2010	0	6/20/2010	0	6/20/2010	0	6/20/2010	0
6/21/2010	0	6/21/2010	0	6/21/2010	0	6/21/2010	0
6/22/2010	0	6/22/2010	0	6/22/2010	0	6/22/2010	0
6/23/2010	0	6/23/2010	0	6/23/2010	0	6/23/2010	0
6/24/2010	0	6/24/2010	0	6/24/2010	0	6/24/2010	0
6/25/2010	0	6/25/2010	0	6/25/2010	0	6/25/2010	0
6/26/2010	0	6/26/2010	0	6/26/2010	0	6/26/2010	0
6/27/2010	0	6/27/2010	0	6/27/2010	0	6/27/2010	0
6/28/2010	0	6/28/2010	0	6/28/2010	0	6/28/2010	0.4
6/29/2010	0.28	6/29/2010	0	6/29/2010	0.42	6/29/2010	0.04

6/30/2010	0.13	6/30/2010	0	6/30/2010	0.3	6/30/2010	0
7/1/2010	0	7/1/2010	0.19	7/1/2010	1.05	7/1/2010	0.58
7/2/2010	0.43	7/2/2010	1.13	7/2/2010	1.19	7/2/2010	1.12
7/3/2010	0.81	7/3/2010	0.24	7/3/2010	1.34	7/3/2010	0
7/4/2010	0	7/4/2010	0	7/4/2010	0.03	7/4/2010	0.02
7/5/2010	0	7/5/2010	0	7/5/2010	0.02	7/5/2010	0
7/6/2010	0	7/6/2010	0	7/6/2010	0	7/6/2010	0
7/7/2010	0	7/7/2010	0	7/7/2010	0	7/7/2010	0.01
7/8/2010	0.07	7/8/2010	0	7/8/2010	0	7/8/2010	0.28
7/9/2010	0.87	7/9/2010	0.95	7/9/2010	0.42	7/9/2010	0.19
7/10/2010	0.47	7/10/2010	0.15	7/10/2010	0.09	7/10/2010	0
7/11/2010	0	7/11/2010	0	7/11/2010	0	7/11/2010	0
7/12/2010	0	7/12/2010	0	7/12/2010	0	7/12/2010	0
7/13/2010	0	7/13/2010	0	7/13/2010	0	7/13/2010	0
7/14/2010	0	7/14/2010	0	7/14/2010	0	7/14/2010	0
7/15/2010	0	7/15/2010	0	7/15/2010	0	7/15/2010	0
7/16/2010	0	7/16/2010	0	7/16/2010	0	7/16/2010	0
7/17/2010	0	7/17/2010	0	7/17/2010	0	7/17/2010	0
7/18/2010	0	7/18/2010	0	7/18/2010	0	7/18/2010	0
7/19/2010	0	7/19/2010	0	7/19/2010	0	7/19/2010	0
7/20/2010	0	7/20/2010	0	7/20/2010	0	7/20/2010	0
7/21/2010	0	7/21/2010	0	7/21/2010	0	7/21/2010	0
7/22/2010	0	7/22/2010	0	7/22/2010	0	7/22/2010	0
7/23/2010	0.13	7/23/2010	0	7/23/2010	0.02	7/23/2010	0
7/24/2010	0	7/24/2010	0.18	7/24/2010	0	7/24/2010	0
7/25/2010	0	7/25/2010	0	7/25/2010	0	7/25/2010	0.24
7/26/2010	0	7/26/2010	0	7/26/2010	0.33	7/26/2010	0.47
7/27/2010	0.28	7/27/2010	0.13	7/27/2010	0.16	7/27/2010	0.07
7/28/2010	0	7/28/2010	0.14	7/28/2010	0	7/28/2010	0.09
7/29/2010	0.15	7/29/2010	0.82	7/29/2010	1	7/29/2010	0
7/30/2010	0	7/30/2010	0	7/30/2010	0	7/30/2010	0
7/31/2010	0	7/31/2010	0	7/31/2010	0	7/31/2010	0
8/1/2010	0	8/1/2010	0	8/1/2010	0	8/1/2010	0
8/2/2010	0	8/2/2010	0	8/2/2010	0	8/2/2010	0
8/3/2010	0	8/3/2010	0	8/3/2010	0	8/3/2010	0
8/4/2010	0	8/4/2010	0	8/4/2010	0	8/4/2010	0
8/5/2010	0	8/5/2010	0	8/5/2010	0	8/5/2010	0
8/6/2010	0	8/6/2010	0	8/6/2010	0	8/6/2010	0

8/7/2010	0	8/7/2010	0	8/7/2010	0	8/7/2010	0
8/8/2010	0	8/8/2010	0	8/8/2010	0	8/8/2010	0
8/9/2010	0	8/9/2010	0	8/9/2010	0	8/9/2010	0
8/10/2010	0	8/10/2010	0	8/10/2010	0	8/10/2010	0
8/11/2010	0	8/11/2010	0	8/11/2010	0	8/11/2010	0
8/12/2010	0.63	8/12/2010	0	8/12/2010	0.04	8/12/2010	0
8/13/2010	0	8/13/2010	0	8/13/2010	0	8/13/2010	0
8/14/2010	0	8/14/2010	0	8/14/2010	0	8/14/2010	0
8/15/2010	0	8/15/2010	0	8/15/2010	0	8/15/2010	0
8/16/2010	0	8/16/2010	0	8/16/2010	0	8/16/2010	0
8/17/2010	0	8/17/2010	0	8/17/2010	0	8/17/2010	0
8/18/2010	0	8/18/2010	0	8/18/2010	0	8/18/2010	0
8/19/2010	0.3	8/19/2010	0	8/19/2010	0	8/19/2010	0
8/20/2010	0	8/20/2010	0	8/20/2010	0	8/20/2010	0
8/21/2010	0	8/21/2010	0	8/21/2010	0	8/21/2010	0
8/22/2010	0	8/22/2010	0	8/22/2010	0	8/22/2010	0
8/23/2010	0	8/23/2010	0	8/23/2010	0	8/23/2010	0
8/24/2010	0	8/24/2010	0	8/24/2010	0	8/24/2010	0
8/25/2010	0	8/25/2010	0.01	8/25/2010	0.09	8/25/2010	0
8/26/2010	0	8/26/2010	0	8/26/2010	0	8/26/2010	0
8/27/2010	0	8/27/2010	0	8/27/2010	0	8/27/2010	0
8/28/2010	0	8/28/2010	0	8/28/2010	0	8/28/2010	0
8/29/2010	0	8/29/2010	0	8/29/2010	0	8/29/2010	0
8/30/2010	0	8/30/2010	0	8/30/2010	0	8/30/2010	0
8/31/2010	0	8/31/2010	0	8/31/2010	0	8/31/2010	0
9/1/2010	0	9/1/2010	0	9/1/2010	0	9/1/2010	0
9/2/2010	0	9/2/2010	0	9/2/2010	0	9/2/2010	0
9/3/2010	0.71	9/3/2010	0.35	9/3/2010	1.43	9/3/2010	0.61
9/4/2010	0.04	9/4/2010	0	9/4/2010	0	9/4/2010	0
9/5/2010	0	9/5/2010	0	9/5/2010	0	9/5/2010	0
9/6/2010	0	9/6/2010	0	9/6/2010	0	9/6/2010	0.01
9/7/2010	1	9/7/2010	0.76	9/7/2010	0.89	9/7/2010	2.19
9/8/2010	5.3	9/8/2010	5.69	9/8/2010	4.72	9/8/2010	1.22
9/9/2010	0.73	9/9/2010	0.33	9/9/2010	3.16	9/9/2010	0
9/10/2010	0	9/10/2010	0	9/10/2010	0	9/10/2010	0
9/11/2010	0	9/11/2010	0	9/11/2010	0	9/11/2010	0
9/12/2010	0	9/12/2010	0	9/12/2010	0	9/12/2010	0
9/13/2010	0	9/13/2010	0	9/13/2010	0	9/13/2010	0.01

9/14/2010	0	9/14/2010	0	9/14/2010	0	9/14/2010	0
9/15/2010	0	9/15/2010	0	9/15/2010	0	9/15/2010	0
9/16/2010	0	9/16/2010	0	9/16/2010	0	9/16/2010	0
9/17/2010	0	9/17/2010	0	9/17/2010	0	9/17/2010	0
9/18/2010	0	9/18/2010	0.1	9/18/2010	0.43	9/18/2010	0
9/19/2010	0	9/19/2010	0.15	9/19/2010	0.25	9/19/2010	0.19
9/20/2010	0	9/20/2010	0.19	9/20/2010	0.57	9/20/2010	0
9/21/2010	0	9/21/2010	0	9/21/2010	0.03	9/21/2010	0
9/22/2010	0.05	9/22/2010	0	9/22/2010	0.21	9/22/2010	0
9/23/2010	0	9/23/2010	0.02	9/23/2010	0.14	9/23/2010	0
9/24/2010	0	9/24/2010	0.01	9/24/2010	0.05	9/24/2010	0
9/25/2010	0	9/25/2010	0	9/25/2010	0.05	9/25/2010	0.36
9/26/2010	0	9/26/2010	0.01	9/26/2010	0.15	9/26/2010	0
9/27/2010	0	9/27/2010	0	9/27/2010	0	9/27/2010	0
9/28/2010	0	9/28/2010	0	9/28/2010	0	9/28/2010	0
9/29/2010	0	9/29/2010	0	9/29/2010	0	9/29/2010	0
9/30/2010	0	9/30/2010	0	9/30/2010	0	9/30/2010	0
10/1/2010	0	10/1/2010	0	10/1/2010	0	10/1/2010	0
10/2/2010	0	10/2/2010	0	10/2/2010	0	10/2/2010	0
10/3/2010	0	10/3/2010	0	10/3/2010	0	10/3/2010	0
10/4/2010	0	10/4/2010	0	10/4/2010	0	10/4/2010	0
10/5/2010	0	10/5/2010	0	10/5/2010	0	10/5/2010	0
10/6/2010	0	10/6/2010	0	10/6/2010	0	10/6/2010	0
10/7/2010	0	10/7/2010	0	10/7/2010	0	10/7/2010	0
10/8/2010	0	10/8/2010	0	10/8/2010	0	10/8/2010	0
10/9/2010	0	10/9/2010	0	10/9/2010	0	10/9/2010	0
10/10/2010	0	10/10/2010	0	10/10/2010	0	10/10/2010	0
10/11/2010	0	10/11/2010	0	10/11/2010	0	10/11/2010	0.54
10/12/2010	0	10/12/2010	0	10/12/2010	0.33	10/12/2010	0
10/13/2010	0	10/13/2010	0	10/13/2010	0	10/13/2010	0
10/14/2010	0	10/14/2010	0	10/14/2010	0	10/14/2010	0
10/15/2010	0	10/15/2010	0	10/15/2010	0	10/15/2010	0
10/16/2010	0	10/16/2010	0	10/16/2010	0	10/16/2010	0
10/17/2010	0	10/17/2010	0	10/17/2010	0	10/17/2010	0
10/18/2010	0	10/18/2010	0	10/18/2010	0	10/18/2010	0
10/19/2010	0	10/19/2010	0	10/19/2010	0	10/19/2010	0
10/20/2010	0	10/20/2010	0	10/20/2010	0	10/20/2010	0
10/21/2010	0	10/21/2010	0	10/21/2010	0	10/21/2010	0

10/22/2010	0	10/22/2010	0.02	10/22/2010	0.03	10/22/2010	0
10/23/2010	0	10/23/2010	0.02	10/23/2010	0	10/23/2010	0.01
10/24/2010	0.27	10/24/2010	0	10/24/2010	0	10/24/2010	0
10/25/2010	0	10/25/2010	0	10/25/2010	0	10/25/2010	0
10/26/2010	0	10/26/2010	0	10/26/2010	0	10/26/2010	0
10/27/2010	0	10/27/2010	0	10/27/2010	0	10/27/2010	0
10/28/2010	0	10/28/2010	0	10/28/2010	0	10/28/2010	0
10/29/2010	0	10/29/2010	0	10/29/2010	0	10/29/2010	0
10/30/2010	0	10/30/2010	0	10/30/2010	0	10/30/2010	0
10/31/2010	0	10/31/2010	0	10/31/2010	0	10/31/2010	0
11/1/2010	0	11/1/2010	0	11/1/2010	0	11/1/2010	0
11/2/2010	0.37	11/2/2010	0.23	11/2/2010	0.17	11/2/2010	0
11/3/2010	0.05	11/3/2010	0	11/3/2010	0	11/3/2010	0.11
11/4/2010	0.06	11/4/2010	0.02	11/4/2010	0	11/4/2010	0
11/5/2010	0	11/5/2010	0	11/5/2010	0	11/5/2010	0
11/6/2010	0	11/6/2010	0	11/6/2010	0	11/6/2010	0
11/7/2010	0	11/7/2010	0	11/7/2010	0	11/7/2010	0
11/8/2010	0	11/8/2010	0	11/8/2010	0	11/8/2010	0
11/9/2010	0	11/9/2010	0	11/9/2010	0	11/9/2010	0
11/10/2010	0	11/10/2010	0	11/10/2010	0	11/10/2010	0
11/11/2010	0	11/11/2010	0	11/11/2010	0	11/11/2010	0
11/12/2010	0.13	11/12/2010	0	11/12/2010	0	11/12/2010	0
11/13/2010	0.05	11/13/2010	0.09	11/13/2010	0	11/13/2010	0
11/14/2010	0	11/14/2010	0	11/14/2010	0	11/14/2010	0
11/15/2010	0	11/15/2010	0	11/15/2010	0	11/15/2010	0
11/16/2010	0	11/16/2010	0	11/16/2010	0	11/16/2010	0
11/17/2010	0	11/17/2010	0	11/17/2010	0	11/17/2010	0
11/18/2010	0	11/18/2010	0	11/18/2010	0	11/18/2010	0
11/19/2010	0	11/19/2010	0	11/19/2010	0	11/19/2010	0
11/20/2010	0	11/20/2010	0	11/20/2010	0	11/20/2010	0
11/21/2010	0	11/21/2010	0	11/21/2010	0	11/21/2010	0
11/22/2010	0	11/22/2010	0	11/22/2010	0.02	11/22/2010	0
11/23/2010	0	11/23/2010	0	11/23/2010	0.02	11/23/2010	0
11/24/2010	0	11/24/2010	0	11/24/2010	0	11/24/2010	0
11/25/2010	0	11/25/2010	0	11/25/2010	0	11/25/2010	0
11/26/2010	0	11/26/2010	0	11/26/2010	0	11/26/2010	0
11/27/2010	0	11/27/2010	0	11/27/2010	0	11/27/2010	0
11/28/2010	0	11/28/2010	0	11/28/2010	0	11/28/2010	0

11/29/2010	0	11/29/2010	0.01	11/29/2010	0	11/29/2010	0
11/30/2010	0	11/30/2010	0	11/30/2010	0	11/30/2010	0
12/1/2010	0	12/1/2010	0	12/1/2010	0	12/1/2010	0
12/2/2010	0	12/2/2010	0	12/2/2010	0	12/2/2010	0
12/3/2010	0	12/3/2010	0	12/3/2010	0	12/3/2010	0
12/4/2010	0	12/4/2010	0	12/4/2010	0	12/4/2010	0
12/5/2010	0	12/5/2010	0	12/5/2010	0	12/5/2010	0
12/6/2010	0	12/6/2010	0	12/6/2010	0	12/6/2010	0
12/7/2010	0	12/7/2010	0	12/7/2010	0	12/7/2010	0
12/8/2010	0	12/8/2010	0	12/8/2010	0	12/8/2010	0
12/9/2010	0	12/9/2010	0	12/9/2010	0	12/9/2010	0
12/10/2010	0	12/10/2010	0	12/10/2010	0	12/10/2010	0
12/11/2010	0	12/11/2010	0	12/11/2010	0	12/11/2010	0
12/12/2010	0	12/12/2010	0	12/12/2010	0	12/12/2010	0
12/13/2010	0	12/13/2010	0	12/13/2010	0	12/13/2010	0
12/14/2010	0	12/14/2010	0	12/14/2010	0	12/14/2010	0
12/15/2010	0	12/15/2010	0	12/15/2010	0	12/15/2010	0
12/16/2010	0	12/16/2010	0	12/16/2010	0	12/16/2010	0
12/17/2010	0	12/17/2010	0	12/17/2010	0	12/17/2010	0
12/18/2010	0	12/18/2010	0	12/18/2010	0	12/18/2010	0
12/19/2010	0	12/19/2010	0	12/19/2010	0	12/19/2010	0
12/20/2010	0	12/20/2010	0	12/20/2010	0	12/20/2010	0
12/21/2010	0	12/21/2010	0	12/21/2010	0	12/21/2010	0
12/22/2010	0	12/22/2010	0.02	12/22/2010	0	12/22/2010	0
12/23/2010	0	12/23/2010	0.01	12/23/2010	0	12/23/2010	0
12/24/2010	0	12/24/2010	0	12/24/2010	0.17	12/24/2010	0.38
12/25/2010	0.93	12/25/2010	0.47	12/25/2010	0	12/25/2010	0
12/26/2010	0	12/26/2010	0	12/26/2010	0	12/26/2010	0
12/27/2010	0	12/27/2010	0	12/27/2010	0	12/27/2010	0
12/28/2010	0	12/28/2010	0.01	12/28/2010	0	12/28/2010	0.08
12/29/2010	0.24	12/29/2010	0.23	12/29/2010	0.85	12/29/2010	0
12/30/2010	0.02	12/30/2010	0	12/30/2010	0	12/30/2010	0
12/31/2010	0	12/31/2010	0	12/31/2010	0	12/31/2010	0
1/1/2011	0	1/1/2011	0	1/1/2011	0	1/1/2011	0
1/2/2011	0	1/2/2011	0	1/2/2011	0	1/2/2011	0
1/3/2011	0	1/3/2011	0	1/3/2011	0	1/3/2011	0
1/4/2011	0	1/4/2011	0	1/4/2011	0	1/4/2011	0
1/5/2011	0.04	1/5/2011	0.09	1/5/2011	0.06	1/5/2011	0

1/6/2011	0	1/6/2011	0	1/6/2011	0	1/6/2011	0
1/7/2011	0	1/7/2011	0	1/7/2011	0	1/7/2011	0
1/8/2011	0	1/8/2011	0	1/8/2011	0	1/8/2011	0
1/9/2011	1.57	1/9/2011	1.46	1/9/2011	0.7	1/9/2011	0.84
1/10/2011	0.12	1/10/2011	0	1/10/2011	0	1/10/2011	0
1/11/2011	0	1/11/2011	0.02	1/11/2011	0	1/11/2011	0
1/12/2011	0	1/12/2011	0	1/12/2011	0	1/12/2011	0
1/13/2011	0	1/13/2011	0	1/13/2011	0	1/13/2011	0
1/14/2011	0	1/14/2011	0	1/14/2011	0	1/14/2011	0
1/15/2011	0.33	1/15/2011	0.51	1/15/2011	0.4	1/15/2011	0.31
1/16/2011	1	1/16/2011	1.07	1/16/2011	0.4	1/16/2011	0.04
1/17/2011	0	1/17/2011	0.04	1/17/2011	0.01	1/17/2011	0
1/18/2011	0	1/18/2011	0	1/18/2011	0	1/18/2011	0
1/19/2011	0	1/19/2011	0	1/19/2011	0	1/19/2011	0
1/20/2011	0.02	1/20/2011	0	1/20/2011	0	1/20/2011	0
1/21/2011	0	1/21/2011	0	1/21/2011	0	1/21/2011	0
1/22/2011	0	1/22/2011	0	1/22/2011	0	1/22/2011	0
1/23/2011	0.01	1/23/2011	0	1/23/2011	0	1/23/2011	0
1/24/2011	0	1/24/2011	0	1/24/2011	0	1/24/2011	0
1/25/2011	0	1/25/2011	0	1/25/2011	0	1/25/2011	0
1/26/2011	0	1/26/2011	0	1/26/2011	0	1/26/2011	0
1/27/2011	0	1/27/2011	0	1/27/2011	0	1/27/2011	0
1/28/2011	0	1/28/2011	0	1/28/2011	0	1/28/2011	0
1/29/2011	0	1/29/2011	0	1/29/2011	0	1/29/2011	0
1/30/2011	0	1/30/2011	0.01	1/30/2011	0.01	1/30/2011	0.01
1/31/2011	0	1/31/2011	0	1/31/2011	0	1/31/2011	0
2/1/2011	0.39	2/1/2011	0.15	2/1/2011	0.16	2/1/2011	0.12
2/2/2011	0	2/2/2011	0	2/2/2011	0	2/2/2011	0
2/3/2011	0	2/3/2011	0	2/3/2011	0	2/3/2011	0
2/4/2011	0.14	2/4/2011	0.04	2/4/2011	0	2/4/2011	0
2/5/2011	0	2/5/2011	0	2/5/2011	0	2/5/2011	0
2/6/2011	0	2/6/2011	0	2/6/2011	0	2/6/2011	0
2/7/2011	0	2/7/2011	0	2/7/2011	0	2/7/2011	0
2/8/2011	0	2/8/2011	0	2/8/2011	0	2/8/2011	0
2/9/2011	0.19	2/9/2011	0.09	2/9/2011	0.17	2/9/2011	0.08
2/10/2011	0	2/10/2011	0	2/10/2011	0	2/10/2011	0
2/11/2011	0	2/11/2011	0	2/11/2011	0	2/11/2011	0
2/12/2011	0	2/12/2011	0	2/12/2011	0	2/12/2011	0

2/13/2011	0	2/13/2011	0	2/13/2011	0	2/13/2011	0
2/14/2011	0	2/14/2011	0	2/14/2011	0	2/14/2011	0
2/15/2011	0	2/15/2011	0	2/15/2011	0	2/15/2011	0
2/16/2011	0	2/16/2011	0.01	2/16/2011	0	2/16/2011	0
2/17/2011	0	2/17/2011	0	2/17/2011	0	2/17/2011	0
2/18/2011	0	2/18/2011	0.02	2/18/2011	0.02	2/18/2011	0
2/19/2011	0	2/19/2011	0	2/19/2011	0.01	2/19/2011	0
2/20/2011	0	2/20/2011	0.05	2/20/2011	0.03	2/20/2011	0
2/21/2011	0	2/21/2011	0	2/21/2011	0	2/21/2011	0
2/22/2011	0	2/22/2011	0	2/22/2011	0	2/22/2011	0
2/23/2011	0.03	2/23/2011	0.01	2/23/2011	0.03	2/23/2011	0
2/24/2011	0	2/24/2011	0	2/24/2011	0.02	2/24/2011	0
2/25/2011	0.23	2/25/2011	0.05	2/25/2011	0.05	2/25/2011	0
2/26/2011	0	2/26/2011	0.01	2/26/2011	0	2/26/2011	0
2/27/2011	0	2/27/2011	0.02	2/27/2011	0	2/27/2011	0
2/28/2011	0	2/28/2011	0.01	2/28/2011	0.01	2/28/2011	0
3/1/2011	0	3/1/2011	0	3/1/2011	0	3/1/2011	0
3/2/2011	0	3/2/2011	0	3/2/2011	0	3/2/2011	0
3/3/2011	0	3/3/2011	0	3/3/2011	0	3/3/2011	0
3/4/2011	0	3/4/2011	0	3/4/2011	0	3/4/2011	0
3/5/2011	0.12	3/5/2011	0	3/5/2011	0	3/5/2011	0
3/6/2011	0	3/6/2011	0.01	3/6/2011	0	3/6/2011	0
3/7/2011	0	3/7/2011	0	3/7/2011	0	3/7/2011	0
3/8/2011	0	3/8/2011	0	3/8/2011	0	3/8/2011	0
3/9/2011	0	3/9/2011	0	3/9/2011	0	3/9/2011	0
3/10/2011	0	3/10/2011	0	3/10/2011	0	3/10/2011	0
3/11/2011	0	3/11/2011	0	3/11/2011	0	3/11/2011	0
3/12/2011	0	3/12/2011	0	3/12/2011	0	3/12/2011	0
3/13/2011	0	3/13/2011	0	3/13/2011	0	3/13/2011	0
3/14/2011	0	3/14/2011	0	3/14/2011	0.03	3/14/2011	0
3/15/2011	0	3/15/2011	0	3/15/2011	0	3/15/2011	0
3/16/2011	0	3/16/2011	0.01	3/16/2011	0.02	3/16/2011	0
3/17/2011	0	3/17/2011	0	3/17/2011	0	3/17/2011	0
3/18/2011	0	3/18/2011	0	3/18/2011	0	3/18/2011	0
3/19/2011	0	3/19/2011	0	3/19/2011	0	3/19/2011	0
3/20/2011	0	3/20/2011	0	3/20/2011	0	3/20/2011	0
3/21/2011	0	3/21/2011	0	3/21/2011	0	3/21/2011	0
3/22/2011	0	3/22/2011	0	3/22/2011	0	3/22/2011	0

3/23/2011	0	3/23/2011	0	3/23/2011	0	3/23/2011	0
3/24/2011	0	3/24/2011	0	3/24/2011	0	3/24/2011	0
3/25/2011	0	3/25/2011	0	3/25/2011	0	3/25/2011	0
3/26/2011	0	3/26/2011	0	3/26/2011	0	3/26/2011	0
3/27/2011	0	3/27/2011	0	3/27/2011	0	3/27/2011	0
3/28/2011	0	3/28/2011	0	3/28/2011	0	3/28/2011	0
3/29/2011	0	3/29/2011	0	3/29/2011	0	3/29/2011	0
3/30/2011	0	3/30/2011	0.03	3/30/2011	0	3/30/2011	0
3/31/2011	0	3/31/2011	0	3/31/2011	0	3/31/2011	0
4/1/2011	0	4/1/2011	0	4/1/2011	0	4/1/2011	0
4/2/2011	0	4/2/2011	0	4/2/2011	0	4/2/2011	0
4/3/2011	0	4/3/2011	0	4/3/2011	0	4/3/2011	0
4/4/2011	0	4/4/2011	0	4/4/2011	0	4/4/2011	0
4/5/2011	0.08	4/5/2011	0	4/5/2011	0	4/5/2011	0
4/6/2011	0	4/6/2011	0	4/6/2011	0	4/6/2011	0
4/7/2011	0	4/7/2011	0	4/7/2011	0	4/7/2011	0
4/8/2011	0	4/8/2011	0	4/8/2011	0	4/8/2011	0
4/9/2011	0	4/9/2011	0	4/9/2011	0	4/9/2011	0
4/10/2011	0	4/10/2011	0	4/10/2011	0	4/10/2011	0
4/11/2011	0.48	4/11/2011	0.02	4/11/2011	0.15	4/11/2011	0.24
4/12/2011	0	4/12/2011	0	4/12/2011	0	4/12/2011	0
4/13/2011	0	4/13/2011	0	4/13/2011	0	4/13/2011	0
4/14/2011	0	4/14/2011	0	4/14/2011	0	4/14/2011	0
4/15/2011	0	4/15/2011	0	4/15/2011	0	4/15/2011	0
4/16/2011	0	4/16/2011	0	4/16/2011	0	4/16/2011	0
4/17/2011	0	4/17/2011	0	4/17/2011	0	4/17/2011	0
4/18/2011	0	4/18/2011	0	4/18/2011	0	4/18/2011	0
4/19/2011	0	4/19/2011	0	4/19/2011	0	4/19/2011	0
4/20/2011	0	4/20/2011	0	4/20/2011	0	4/20/2011	0
4/21/2011	0	4/21/2011	0	4/21/2011	0	4/21/2011	0
4/22/2011	0	4/22/2011	0	4/22/2011	0	4/22/2011	0
4/23/2011	0	4/23/2011	0	4/23/2011	0	4/23/2011	0
4/24/2011	0	4/24/2011	0	4/24/2011	0	4/24/2011	0
4/25/2011	0	4/25/2011	0	4/25/2011	0	4/25/2011	0
4/26/2011	0.09	4/26/2011	0.02	4/26/2011	0.03	4/26/2011	0
4/27/2011	0	4/27/2011	0	4/27/2011	0	4/27/2011	0
4/28/2011	0	4/28/2011	0	4/28/2011	0	4/28/2011	0
4/29/2011	0	4/29/2011	0	4/29/2011	0	4/29/2011	0

4/30/2011	0	4/30/2011	0	4/30/2011	0	4/30/2011	0
5/1/2011	0	5/1/2011	0	5/1/2011	0	5/1/2011	0
5/2/2011	0.08	5/2/2011	0	5/2/2011	0	5/2/2011	0.12
5/3/2011	0.06	5/3/2011	0.02	5/3/2011	0.03	5/3/2011	0
5/4/2011	0	5/4/2011	0	5/4/2011	0	5/4/2011	0
5/5/2011	0	5/5/2011	0	5/5/2011	0	5/5/2011	0
5/6/2011	0	5/6/2011	0	5/6/2011	0	5/6/2011	0
5/7/2011	0	5/7/2011	0	5/7/2011	0	5/7/2011	0
5/8/2011	0	5/8/2011	0	5/8/2011	0	5/8/2011	0
5/9/2011	0	5/9/2011	0	5/9/2011	0	5/9/2011	0
5/10/2011	0	5/10/2011	0	5/10/2011	0	5/10/2011	0
5/11/2011	0.05	5/11/2011	0.01	5/11/2011	0	5/11/2011	1.1
5/12/2011	0.16	5/12/2011	0	5/12/2011	0	5/12/2011	0.33
5/13/2011	0.42	5/13/2011	0.83	5/13/2011	0	5/13/2011	0
5/14/2011	0	5/14/2011	0	5/14/2011	0	5/14/2011	0
5/15/2011	0	5/15/2011	0	5/15/2011	0	5/15/2011	0
5/16/2011	0	5/16/2011	0	5/16/2011	0	5/16/2011	0
5/17/2011	0	5/17/2011	0	5/17/2011	0	5/17/2011	0
5/18/2011	0	5/18/2011	0	5/18/2011	0	5/18/2011	0
5/19/2011	0	5/19/2011	0	5/19/2011	0	5/19/2011	0
5/20/2011	0.06	5/20/2011	0.03	5/20/2011	0	5/20/2011	0
5/21/2011	0	5/21/2011	0.03	5/21/2011	0.02	5/21/2011	0
5/22/2011	0.12	5/22/2011	0	5/22/2011	0	5/22/2011	0
5/23/2011	0	5/23/2011	0	5/23/2011	0	5/23/2011	0
5/24/2011	0	5/24/2011	0	5/24/2011	0	5/24/2011	0
5/25/2011	0	5/25/2011	0	5/25/2011	0	5/25/2011	0.03
5/26/2011	0	5/26/2011	0	5/26/2011	0	5/26/2011	0
5/27/2011	0	5/27/2011	0	5/27/2011	0	5/27/2011	0
5/28/2011	0	5/28/2011	0	5/28/2011	0	5/28/2011	0
5/29/2011	0	5/29/2011	0	5/29/2011	0	5/29/2011	0
5/30/2011	0	5/30/2011	0	5/30/2011	0	5/30/2011	0
5/31/2011	0	5/31/2011	0	5/31/2011	0	5/31/2011	0
6/1/2011	0	6/1/2011	0	6/1/2011	0	6/1/2011	0
6/2/2011	0	6/2/2011	0	6/2/2011	0	6/2/2011	0
6/3/2011	0	6/3/2011	0	6/3/2011	0	6/3/2011	0
6/4/2011	0	6/4/2011	0	6/4/2011	0	6/4/2011	0
6/5/2011	0	6/5/2011	0	6/5/2011	0	6/5/2011	0.01
6/6/2011	0	6/6/2011	0	6/6/2011	0	6/6/2011	0

6/7/2011	0	6/7/2011	0	6/7/2011	0	6/7/2011	0
6/8/2011	0	6/8/2011	0	6/8/2011	0	6/8/2011	0
6/9/2011	0	6/9/2011	0	6/9/2011	0	6/9/2011	0
6/10/2011	0	6/10/2011	0	6/10/2011	0	6/10/2011	0
6/11/2011	0	6/11/2011	0	6/11/2011	0	6/11/2011	0
6/12/2011	0	6/12/2011	0	6/12/2011	0	6/12/2011	0
6/13/2011	0	6/13/2011	0	6/13/2011	0	6/13/2011	0
6/14/2011	0	6/14/2011	0	6/14/2011	0	6/14/2011	0
6/15/2011	0	6/15/2011	0	6/15/2011	0	6/15/2011	0
6/16/2011	0	6/16/2011	0	6/16/2011	0	6/16/2011	0
6/17/2011	0	6/17/2011	0	6/17/2011	0	6/17/2011	0
6/18/2011	0	6/18/2011	0	6/18/2011	0	6/18/2011	0
6/19/2011	0	6/19/2011	0	6/19/2011	0	6/19/2011	0
6/20/2011	0	6/20/2011	0	6/20/2011	0	6/20/2011	0
6/21/2011	0	6/21/2011	0	6/21/2011	0	6/21/2011	0
6/22/2011	0.91	6/22/2011	2.12	6/22/2011	0.57	6/22/2011	0.02
6/23/2011	0	6/23/2011	0.23	6/23/2011	0	6/23/2011	0
6/24/2011	0	6/24/2011	0	6/24/2011	0	6/24/2011	0
6/25/2011	0	6/25/2011	0	6/25/2011	0	6/25/2011	0
6/26/2011	0	6/26/2011	0	6/26/2011	0	6/26/2011	0
6/27/2011	0	6/27/2011	0	6/27/2011	0	6/27/2011	0
6/28/2011	0	6/28/2011	0	6/28/2011	0	6/28/2011	0
6/29/2011	0	6/29/2011	0	6/29/2011	0	6/29/2011	0
6/30/2011	0	6/30/2011	0	6/30/2011	0	6/30/2011	0
7/1/2011	0	7/1/2011	0	7/1/2011	0	7/1/2011	0
7/2/2011	0	7/2/2011	0	7/2/2011	0	7/2/2011	0
7/3/2011	0	7/3/2011	0	7/3/2011	0	7/3/2011	0
7/4/2011	0	7/4/2011	0	7/4/2011	0	7/4/2011	0
7/5/2011	0	7/5/2011	0	7/5/2011	0	7/5/2011	0
7/6/2011	0	7/6/2011	0	7/6/2011	0	7/6/2011	0
7/7/2011	0.26	7/7/2011	0	7/7/2011	0	7/7/2011	0
7/8/2011	0	7/8/2011	0	7/8/2011	0	7/8/2011	0
7/9/2011	0	7/9/2011	0	7/9/2011	0	7/9/2011	0
7/10/2011	0	7/10/2011	0	7/10/2011	0	7/10/2011	0.05
7/11/2011	0	7/11/2011	0.32	7/11/2011	0.02	7/11/2011	0
7/12/2011	0	7/12/2011	0	7/12/2011	0	7/12/2011	0
7/13/2011	0	7/13/2011	0	7/13/2011	0	7/13/2011	0
7/14/2011	0	7/14/2011	0	7/14/2011	0	7/14/2011	0

7/15/2011	0	7/15/2011	0	7/15/2011	0	7/15/2011	0
7/16/2011	0.11	7/16/2011	0	7/16/2011	0	7/16/2011	0.02
7/17/2011	0	7/17/2011	0	7/17/2011	0	7/17/2011	0
7/18/2011	0	7/18/2011	0	7/18/2011	0	7/18/2011	0.02
7/19/2011	0	7/19/2011	0	7/19/2011	0.03	7/19/2011	0
7/20/2011	0.05	7/20/2011	1.69	7/20/2011	0.07	7/20/2011	0
7/21/2011	0	7/21/2011	0	7/21/2011	0	7/21/2011	0
7/22/2011	0	7/22/2011	0	7/22/2011	0	7/22/2011	0
7/23/2011	0	7/23/2011	0	7/23/2011	0	7/23/2011	0
7/24/2011	0	7/24/2011	0	7/24/2011	0	7/24/2011	0
7/25/2011	0	7/25/2011	0	7/25/2011	0	7/25/2011	0
7/26/2011	0	7/26/2011	0	7/26/2011	0	7/26/2011	0
7/27/2011	0	7/27/2011	0	7/27/2011	0	7/27/2011	0
7/28/2011	0	7/28/2011	0	7/28/2011	0	7/28/2011	0
7/29/2011	0	7/29/2011	0	7/29/2011	0	7/29/2011	0
7/30/2011	0	7/30/2011	0.07	7/30/2011	0	7/30/2011	0
7/31/2011	0	7/31/2011	0	7/31/2011	0.03	7/31/2011	0
8/1/2011	0	8/1/2011	0	8/1/2011	0	8/1/2011	0
8/2/2011	0	8/2/2011	0	8/2/2011	0	8/2/2011	0
8/3/2011	0	8/3/2011	0	8/3/2011	0	8/3/2011	0
8/4/2011	0	8/4/2011	0	8/4/2011	0	8/4/2011	0
8/5/2011	0	8/5/2011	0	8/5/2011	0	8/5/2011	0.03
8/6/2011	0	8/6/2011	0	8/6/2011	0	8/6/2011	0
8/7/2011	0	8/7/2011	0	8/7/2011	0	8/7/2011	0
8/8/2011	0	8/8/2011	0	8/8/2011	0	8/8/2011	0
8/9/2011	0	8/9/2011	0	8/9/2011	0	8/9/2011	0
8/10/2011	0	8/10/2011	0	8/10/2011	0	8/10/2011	0
8/11/2011	0	8/11/2011	0	8/11/2011	0	8/11/2011	0
8/12/2011	0	8/12/2011	0	8/12/2011	0	8/12/2011	0
8/13/2011	0	8/13/2011	0	8/13/2011	0	8/13/2011	0
8/14/2011	0	8/14/2011	0	8/14/2011	0.01	8/14/2011	0
8/15/2011	0.11	8/15/2011	0	8/15/2011	0	8/15/2011	0
8/16/2011	0	8/16/2011	0	8/16/2011	0	8/16/2011	0
8/17/2011	0	8/17/2011	0	8/17/2011	0	8/17/2011	0
8/18/2011	0	8/18/2011	0	8/18/2011	0	8/18/2011	0
8/19/2011	0	8/19/2011	0	8/19/2011	0	8/19/2011	0
8/20/2011	0	8/20/2011	0	8/20/2011	0	8/20/2011	0
8/21/2011	0	8/21/2011	0	8/21/2011	0	8/21/2011	0

8/22/2011	0	8/22/2011	0	8/22/2011	0	8/22/2011	0
8/23/2011	0	8/23/2011	0	8/23/2011	0	8/23/2011	0
8/24/2011	0	8/24/2011	0	8/24/2011	0	8/24/2011	0
8/25/2011	0	8/25/2011	0	8/25/2011	0	8/25/2011	0
8/26/2011	0	8/26/2011	0.12	8/26/2011	0	8/26/2011	0
8/27/2011	0	8/27/2011	0	8/27/2011	0	8/27/2011	0
8/28/2011	0	8/28/2011	0	8/28/2011	0	8/28/2011	0
8/29/2011	0	8/29/2011	0	8/29/2011	0.07	8/29/2011	0
8/30/2011	0	8/30/2011	0	8/30/2011	0	8/30/2011	0
8/31/2011	0	8/31/2011	0	8/31/2011	0	8/31/2011	0
9/1/2011	0	9/1/2011	0	9/1/2011	0	9/1/2011	0
9/2/2011	0	9/2/2011	0	9/2/2011	0	9/2/2011	0
9/3/2011	0	9/3/2011	0	9/3/2011	0	9/3/2011	0
9/4/2011	0	9/4/2011	0	9/4/2011	0	9/4/2011	0
9/5/2011	0	9/5/2011	0	9/5/2011	0	9/5/2011	0
9/6/2011	0	9/6/2011	0	9/6/2011	0	9/6/2011	0
9/7/2011	0	9/7/2011	0	9/7/2011	0	9/7/2011	0
9/8/2011	0	9/8/2011	0	9/8/2011	0	9/8/2011	0
9/9/2011	0	9/9/2011	0	9/9/2011	0	9/9/2011	0
9/10/2011	0	9/10/2011	0	9/10/2011	0	9/10/2011	0
9/11/2011	0	9/11/2011	0	9/11/2011	0	9/11/2011	0
9/12/2011	0	9/12/2011	0	9/12/2011	0	9/12/2011	0
9/13/2011	0	9/13/2011	0	9/13/2011	0	9/13/2011	0
9/14/2011	0	9/14/2011	0	9/14/2011	0	9/14/2011	0
9/15/2011	0	9/15/2011	0	9/15/2011	0	9/15/2011	0
9/16/2011	0	9/16/2011	0	9/16/2011	0	9/16/2011	0
9/17/2011	0	9/17/2011	0.02	9/17/2011	0.56	9/17/2011	0
9/18/2011	0.1	9/18/2011	1.46	9/18/2011	0.96	9/18/2011	0.44
9/19/2011	0	9/19/2011	0.46	9/19/2011	0.09	9/19/2011	0
9/20/2011	0	9/20/2011	0	9/20/2011	0	9/20/2011	0
9/21/2011	0	9/21/2011	0	9/21/2011	0	9/21/2011	0
9/22/2011	0	9/22/2011	0	9/22/2011	0.03	9/22/2011	0
9/23/2011	0	9/23/2011	0	9/23/2011	0	9/23/2011	0
9/24/2011	0	9/24/2011	0	9/24/2011	0	9/24/2011	0
9/25/2011	0	9/25/2011	0	9/25/2011	0	9/25/2011	0
9/26/2011	0	9/26/2011	0	9/26/2011	0	9/26/2011	0
9/27/2011	0	9/27/2011	0	9/27/2011	0	9/27/2011	0.17
9/28/2011	0	9/28/2011	0.64	9/28/2011	0.4	9/28/2011	0

9/29/2011	0	9/29/2011	0	9/29/2011	0	9/29/2011	0.01
9/30/2011	0	9/30/2011	0.68	9/30/2011	0.82	9/30/2011	0
10/1/2011	0	10/1/2011	0	10/1/2011	0	10/1/2011	0
10/2/2011	0	10/2/2011	0	10/2/2011	0	10/2/2011	0
10/3/2011	0	10/3/2011	0	10/3/2011	0	10/3/2011	0
10/4/2011	0	10/4/2011	0	10/4/2011	0	10/4/2011	0
10/5/2011	0	10/5/2011	0	10/5/2011	0	10/5/2011	0
10/6/2011	0	10/6/2011	0	10/6/2011	0	10/6/2011	0
10/7/2011	0	10/7/2011	0	10/7/2011	0	10/7/2011	0
10/8/2011	0	10/8/2011	0	10/8/2011	0.13	10/8/2011	0.12
10/9/2011	1.77	10/9/2011	2.14	10/9/2011	4.14	10/9/2011	1.84
10/10/2011	0	10/10/2011	0.31	10/10/2011	0.19	10/10/2011	0
10/11/2011	0	10/11/2011	0	10/11/2011	0	10/11/2011	0
10/12/2011	0	10/12/2011	0	10/12/2011	0	10/12/2011	0
10/13/2011	0	10/13/2011	0	10/13/2011	0	10/13/2011	0
10/14/2011	0	10/14/2011	0	10/14/2011	0	10/14/2011	0
10/15/2011	0	10/15/2011	0	10/15/2011	0	10/15/2011	0
10/16/2011	0	10/16/2011	0	10/16/2011	0	10/16/2011	0
10/17/2011	0	10/17/2011	0	10/17/2011	0	10/17/2011	0
10/18/2011	0	10/18/2011	0	10/18/2011	0	10/18/2011	0
10/19/2011	0	10/19/2011	0	10/19/2011	0	10/19/2011	0
10/20/2011	0	10/20/2011	0	10/20/2011	0	10/20/2011	0
10/21/2011	0	10/21/2011	0	10/21/2011	0	10/21/2011	0
10/22/2011	0	10/22/2011	0	10/22/2011	0	10/22/2011	0
10/23/2011	0	10/23/2011	0	10/23/2011	0	10/23/2011	0
10/24/2011	0	10/24/2011	0	10/24/2011	0	10/24/2011	0
10/25/2011	0	10/25/2011	0	10/25/2011	0	10/25/2011	0
10/26/2011	0	10/26/2011	0	10/26/2011	0	10/26/2011	0
10/27/2011	0	10/27/2011	0	10/27/2011	0	10/27/2011	0
10/28/2011	0	10/28/2011	0	10/28/2011	0	10/28/2011	0
10/29/2011	0	10/29/2011	0	10/29/2011	0	10/29/2011	0
10/30/2011	0	10/30/2011	0	10/30/2011	0	10/30/2011	0
10/31/2011	0	10/31/2011	0	10/31/2011	0	10/31/2011	0
11/1/2011	0	11/1/2011	0	11/1/2011	0	11/1/2011	0
11/2/2011	0	11/2/2011	0	11/2/2011	0	11/2/2011	0
11/3/2011	0	11/3/2011	0	11/3/2011	0	11/3/2011	0
11/4/2011	0	11/4/2011	0	11/4/2011	0	11/4/2011	0
11/5/2011	0	11/5/2011	0	11/5/2011	0	11/5/2011	0

11/6/2011	0	11/6/2011	0	11/6/2011	0	11/6/2011	0.02
11/7/2011	0.08	11/7/2011	0.03	11/7/2011	0	11/7/2011	0.01
11/8/2011	0.04	11/8/2011	0	11/8/2011	0.02	11/8/2011	0.03
11/9/2011	0.05	11/9/2011	0.08	11/9/2011	0.06	11/9/2011	0
11/10/2011	0	11/10/2011	0	11/10/2011	0	11/10/2011	0
11/11/2011	0	11/11/2011	0	11/11/2011	0	11/11/2011	0
11/12/2011	0	11/12/2011	0	11/12/2011	0	11/12/2011	0
11/13/2011	0	11/13/2011	0	11/13/2011	0	11/13/2011	0
11/14/2011	0	11/14/2011	0	11/14/2011	0	11/14/2011	0
11/15/2011	0	11/15/2011	0	11/15/2011	0.06	11/15/2011	0.37
11/16/2011	0.23	11/16/2011	1.16	11/16/2011	0.6	11/16/2011	0.01
11/17/2011	0	11/17/2011	0	11/17/2011	0	11/17/2011	0
11/18/2011	0	11/18/2011	0	11/18/2011	0	11/18/2011	0
11/19/2011	0	11/19/2011	0	11/19/2011	0	11/19/2011	0
11/20/2011	0	11/20/2011	0	11/20/2011	0	11/20/2011	0
11/21/2011	0	11/21/2011	0	11/21/2011	0.01	11/21/2011	0.14
11/22/2011	0.72	11/22/2011	0.19	11/22/2011	0.1	11/22/2011	0.77
11/23/2011	0	11/23/2011	0	11/23/2011	0	11/23/2011	0
11/24/2011	0	11/24/2011	0	11/24/2011	0	11/24/2011	0
11/25/2011	0	11/25/2011	0	11/25/2011	0	11/25/2011	0
11/26/2011	1.47	11/26/2011	1.27	11/26/2011	1.06	11/26/2011	0.3
11/27/2011	0	11/27/2011	0.23	11/27/2011	0	11/27/2011	0
11/28/2011	0	11/28/2011	0	11/28/2011	0	11/28/2011	0
11/29/2011	0	11/29/2011	0	11/29/2011	0	11/29/2011	0
11/30/2011	0	11/30/2011	0	11/30/2011	0	11/30/2011	0
12/1/2011	0	12/1/2011	0	12/1/2011	0	12/1/2011	0
12/2/2011	0.2	12/2/2011	0.02	12/2/2011	0.01	12/2/2011	0.45
12/3/2011	0.34	12/3/2011	0.44	12/3/2011	0.62	12/3/2011	0.05
12/4/2011	0.74	12/4/2011	0.64	12/4/2011	0.27	12/4/2011	0.36
12/5/2011	0.79	12/5/2011	0.61	12/5/2011	0.49	12/5/2011	0.32
12/6/2011	0	12/6/2011	0.01	12/6/2011	0	12/6/2011	0
12/7/2011	0	12/7/2011	0	12/7/2011	0	12/7/2011	0
12/8/2011	0	12/8/2011	0	12/8/2011	0	12/8/2011	0
12/9/2011	0	12/9/2011	0	12/9/2011	0	12/9/2011	0
12/10/2011	0	12/10/2011	0	12/10/2011	0	12/10/2011	0
12/11/2011	0	12/11/2011	0.74	12/11/2011	0.57	12/11/2011	0.1
12/12/2011	0	12/12/2011	0.01	12/12/2011	0.02	12/12/2011	0
12/13/2011	0	12/13/2011	0.02	12/13/2011	0.21	12/13/2011	0

12/14/2011	0.37	12/14/2011	0.09	12/14/2011	0.26	12/14/2011	0.05
12/15/2011	0.84	12/15/2011	0.09	12/15/2011	0.12	12/15/2011	0.23
12/16/2011	0.22	12/16/2011	0.28	12/16/2011	0.1	12/16/2011	0.01
12/17/2011	0	12/17/2011	0	12/17/2011	0	12/17/2011	0
12/18/2011	0	12/18/2011	0	12/18/2011	0	12/18/2011	0
12/19/2011	0.02	12/19/2011	0.09	12/19/2011	0.45	12/19/2011	0.05
12/20/2011	0.55	12/20/2011	0.1	12/20/2011	0.03	12/20/2011	0
12/21/2011	0	12/21/2011	0	12/21/2011	0	12/21/2011	0
12/22/2011	0.86	12/22/2011	0.78	12/22/2011	0.84	12/22/2011	0.08
12/23/2011	0	12/23/2011	0	12/23/2011	0	12/23/2011	0
12/24/2011	0	12/24/2011	0	12/24/2011	0.02	12/24/2011	0
12/25/2011	0.22	12/25/2011	0.24	12/25/2011	0	12/25/2011	0
12/26/2011	0	12/26/2011	0.07	12/26/2011	0	12/26/2011	0
12/27/2011	0	12/27/2011	0	12/27/2011	0	12/27/2011	0
12/28/2011	0	12/28/2011	0	12/28/2011	0	12/28/2011	0
12/29/2011	0	12/29/2011	0	12/29/2011	0	12/29/2011	0
12/30/2011	0	12/30/2011	0	12/30/2011	0	12/30/2011	0
12/31/2011	0	12/31/2011	0	12/31/2011	0	12/31/2011	0
1/1/2012	0	1/1/2012	0	1/1/2012	0	1/1/2012	0
1/2/2012	0	1/2/2012	0	1/2/2012	0	1/2/2012	0
1/3/2012	0	1/3/2012	0	1/3/2012	0	1/3/2012	0
1/4/2012	0	1/4/2012	0	1/4/2012	0	1/4/2012	0
1/5/2012	0	1/5/2012	0	1/5/2012	0	1/5/2012	0
1/6/2012	0	1/6/2012	0	1/6/2012	0	1/6/2012	0
1/7/2012	0	1/7/2012	0	1/7/2012	0	1/7/2012	0
1/8/2012	0	1/8/2012	0	1/8/2012	0	1/8/2012	0
1/9/2012	0.55	1/9/2012	0.01	1/9/2012	0.18	1/9/2012	0.47
1/10/2012	0	1/10/2012	0.01	1/10/2012	0.11	1/10/2012	0
1/11/2012	0	1/11/2012	0	1/11/2012	0	1/11/2012	0
1/12/2012	0	1/12/2012	0	1/12/2012	0	1/12/2012	0
1/13/2012	0	1/13/2012	0	1/13/2012	0	1/13/2012	0
1/14/2012	0	1/14/2012	0	1/14/2012	0	1/14/2012	0
1/15/2012	0	1/15/2012	0	1/15/2012	0	1/15/2012	0
1/16/2012	0	1/16/2012	0	1/16/2012	0	1/16/2012	0
1/17/2012	0	1/17/2012	0.01	1/17/2012	0	1/17/2012	0
1/18/2012	0	1/18/2012	0	1/18/2012	0	1/18/2012	0
1/19/2012	0	1/19/2012	0	1/19/2012	0	1/19/2012	0
1/20/2012	0	1/20/2012	0	1/20/2012	0	1/20/2012	0

1/21/2012	0	1/21/2012	0.01	1/21/2012	0	1/21/2012	0
1/22/2012	0	1/22/2012	0	1/22/2012	0	1/22/2012	0
1/23/2012	0	1/23/2012	0	1/23/2012	0	1/23/2012	0
1/24/2012	0	1/24/2012	0	1/24/2012	0	1/24/2012	0.21
1/25/2012	1.77	1/25/2012	3.39	1/25/2012	1.52	1/25/2012	0.54
1/26/2012	0.06	1/26/2012	0	1/26/2012	0.01	1/26/2012	0.01
1/27/2012	0	1/27/2012	0	1/27/2012	0	1/27/2012	0
1/28/2012	0	1/28/2012	0	1/28/2012	0	1/28/2012	0
1/29/2012	0	1/29/2012	0	1/29/2012	0	1/29/2012	0
1/30/2012	0	1/30/2012	0	1/30/2012	0	1/30/2012	0
1/31/2012	0.08	1/31/2012	0.47	1/31/2012	0.11	1/31/2012	0
2/1/2012	0	2/1/2012	0.02	2/1/2012	0	2/1/2012	0.01
2/2/2012	0	2/2/2012	0.02	2/2/2012	0	2/2/2012	0
2/3/2012	0	2/3/2012	0.12	2/3/2012	0	2/3/2012	0.01
2/4/2012	0.14	2/4/2012	1.51	2/4/2012	0.24	2/4/2012	0.085
2/5/2012	0.05	2/5/2012	0.17	2/5/2012	0.01	2/5/2012	0.02
2/6/2012	0.02	2/6/2012	0.19	2/6/2012	0.18	2/6/2012	0.01
2/7/2012	0	2/7/2012	0	2/7/2012	0	2/7/2012	0
2/8/2012	0	2/8/2012	0	2/8/2012	0	2/8/2012	0
2/9/2012	0	2/9/2012	0	2/9/2012	0	2/9/2012	0
2/10/2012	0.05	2/10/2012	0.08	2/10/2012	0.08	2/10/2012	0.1
2/11/2012	0	2/11/2012	0.02	2/11/2012	0	2/11/2012	0
2/12/2012	0	2/12/2012	0	2/12/2012	0	2/12/2012	0
2/13/2012	0	2/13/2012	0.37	2/13/2012	0.26	2/13/2012	0.33
2/14/2012	0	2/14/2012	0.04	2/14/2012	0	2/14/2012	0.03
2/15/2012	0	2/15/2012	0	2/15/2012	0	2/15/2012	0
2/16/2012	0	2/16/2012	0	2/16/2012	0	2/16/2012	0
2/17/2012	0.7	2/17/2012	0.13	2/17/2012	0.26	2/17/2012	0.29
2/18/2012	3.7	2/18/2012	1.51	2/18/2012	1.86	2/18/2012	2.35
2/19/2012	0.03	2/19/2012	0.32	2/19/2012	0.04	2/19/2012	0.265
2/20/2012	0	2/20/2012	0	2/20/2012	0	2/20/2012	0.01
2/21/2012	0	2/21/2012	0	2/21/2012	0	2/21/2012	0
2/22/2012	0	2/22/2012	0	2/22/2012	0	2/22/2012	0
2/23/2012	0	2/23/2012	0	2/23/2012	0	2/23/2012	0
2/24/2012	0	2/24/2012	0	2/24/2012	0	2/24/2012	0
2/25/2012	0	2/25/2012	0	2/25/2012	0	2/25/2012	0
2/26/2012	0	2/26/2012	0	2/26/2012	0	2/26/2012	0
2/27/2012	0	2/27/2012	0	2/27/2012	0.01	2/27/2012	0

2/28/2012	0.05	2/28/2012	0.17	2/28/2012	0.33	2/28/2012	0.025
2/29/2012	0	2/29/2012	0.01	2/29/2012	0.01	2/29/2012	0
3/1/2012	0	3/1/2012	0	3/1/2012	0.01	3/1/2012	0.03
3/2/2012	0	3/2/2012	0.02	3/2/2012	0	3/2/2012	0.01
3/3/2012	0	3/3/2012	0.02	3/3/2012	0.03	3/3/2012	0
3/4/2012	0	3/4/2012	0	3/4/2012	0	3/4/2012	0
3/5/2012	0	3/5/2012	0	3/5/2012	0	3/5/2012	0
3/6/2012	0	3/6/2012	0	3/6/2012	0	3/6/2012	0
3/7/2012	0.01	3/7/2012	0	3/7/2012	0	3/7/2012	0
3/8/2012	0.01	3/8/2012	0.02	3/8/2012	0	3/8/2012	0
3/9/2012	0.27	3/9/2012	0	3/9/2012	0.64	3/9/2012	0.07
3/10/2012	0.4	3/10/2012	0.47	3/10/2012	0.29	3/10/2012	0.715
3/11/2012	1.3	3/11/2012	0.74	3/11/2012	0.38	3/11/2012	0.84
3/12/2012	0	3/12/2012	0.03	3/12/2012	0	3/12/2012	0.19
3/13/2012	0	3/13/2012	0	3/13/2012	0	3/13/2012	0
3/14/2012	0	3/14/2012	0	3/14/2012	0	3/14/2012	0
3/15/2012	0	3/15/2012	0	3/15/2012	0	3/15/2012	0
3/16/2012	0	3/16/2012	0	3/16/2012	0	3/16/2012	0
3/17/2012	0	3/17/2012	0	3/17/2012	0	3/17/2012	0
3/18/2012	0	3/18/2012	0	3/18/2012	0	3/18/2012	0
3/19/2012	0	3/19/2012	0.03	3/19/2012	0.07	3/19/2012	0
3/20/2012	2.74	3/20/2012	2.48	3/20/2012	2.34	3/20/2012	2.64
3/21/2012	0.01	3/21/2012	0	3/21/2012	0	3/21/2012	0.02
3/22/2012	0	3/22/2012	0	3/22/2012	0	3/22/2012	0
3/23/2012	0	3/23/2012	0	3/23/2012	0	3/23/2012	0
3/24/2012	0	3/24/2012	0.01	3/24/2012	0	3/24/2012	0
3/25/2012	0	3/25/2012	0	3/25/2012	0	3/25/2012	0
3/26/2012	0	3/26/2012	0	3/26/2012	0	3/26/2012	0
3/27/2012	0	3/27/2012	0	3/27/2012	0	3/27/2012	0
3/28/2012	0	3/28/2012	0.03	3/28/2012	0	3/28/2012	0
3/29/2012	0.16	3/29/2012	0.02	3/29/2012	0.25	3/29/2012	0.18
3/30/2012	0	3/30/2012	0	3/30/2012	0	3/30/2012	0.01
3/31/2012	0	3/31/2012	0	3/31/2012	0	3/31/2012	0
4/1/2012	0	4/1/2012	0	4/1/2012	0	4/1/2012	0
4/2/2012	0	4/2/2012	0	4/2/2012	0	4/2/2012	0
4/3/2012	0	4/3/2012	0	4/3/2012	0	4/3/2012	0
4/4/2012	0	4/4/2012	0	4/4/2012	0	4/4/2012	0.05
4/5/2012	0	4/5/2012	0	4/5/2012	0	4/5/2012	0

4/6/2012	0	4/6/2012	0	4/6/2012	0	4/6/2012	0
4/7/2012	0	4/7/2012	0	4/7/2012	0	4/7/2012	0
4/8/2012	0	4/8/2012	0	4/8/2012	0	4/8/2012	0
4/9/2012	0	4/9/2012	0	4/9/2012	0	4/9/2012	0
4/10/2012	0	4/10/2012	0	4/10/2012	0	4/10/2012	0
4/11/2012	0	4/11/2012	0	4/11/2012	0	4/11/2012	0
4/12/2012	0	4/12/2012	0	4/12/2012	0	4/12/2012	0
4/13/2012	0	4/13/2012	0	4/13/2012	0.03	4/13/2012	0
4/14/2012	0	4/14/2012	0	4/14/2012	0.04	4/14/2012	0
4/15/2012	0	4/15/2012	0	4/15/2012	0.01	4/15/2012	0
4/16/2012	0	4/16/2012	0	4/16/2012	0.01	4/16/2012	0.015
4/17/2012	0	4/17/2012	0	4/17/2012	0	4/17/2012	0
4/18/2012	0	4/18/2012	0	4/18/2012	0	4/18/2012	0
4/19/2012	0	4/19/2012	0	4/19/2012	0	4/19/2012	0
4/20/2012	0	4/20/2012	0	4/20/2012	0	4/20/2012	0
4/21/2012	0.26	4/21/2012	0.06	4/21/2012	0.02	4/21/2012	0.035
4/22/2012	0	4/22/2012	0	4/22/2012	0	4/22/2012	0
4/23/2012	0	4/23/2012	0	4/23/2012	0	4/23/2012	0
4/24/2012	0	4/24/2012	0	4/24/2012	0	4/24/2012	0
4/25/2012	0	4/25/2012	0	4/25/2012	0	4/25/2012	0
4/26/2012	0	4/26/2012	0	4/26/2012	0	4/26/2012	0
4/27/2012	0	4/27/2012	0	4/27/2012	0	4/27/2012	0
4/28/2012	0	4/28/2012	0	4/28/2012	0	4/28/2012	0
4/29/2012	0	4/29/2012	0	4/29/2012	0	4/29/2012	0
4/30/2012	0	4/30/2012	0	4/30/2012	0	4/30/2012	0
5/1/2012	0	5/1/2012	0	5/1/2012	0.02	5/1/2012	0
5/2/2012	0	5/2/2012	0	5/2/2012	0	5/2/2012	0
5/3/2012	0	5/3/2012	0	5/3/2012	0	5/3/2012	0
5/4/2012	0	5/4/2012	0	5/4/2012	0.02	5/4/2012	0
5/5/2012	0	5/5/2012	0	5/5/2012	0	5/5/2012	0
5/6/2012	0.22	5/6/2012	1.52	5/6/2012	1.64	5/6/2012	0.26
5/7/2012	0	5/7/2012	0.21	5/7/2012	0	5/7/2012	0.02
5/8/2012	0.16	5/8/2012	0.12	5/8/2012	0.25	5/8/2012	0.09
5/9/2012	0.16	5/9/2012	0.87	5/9/2012	1.2	5/9/2012	0.33
5/10/2012	0	5/10/2012	0	5/10/2012	0	5/10/2012	0.01
5/11/2012	1.62	5/11/2012	1.23	5/11/2012	0.66	5/11/2012	1.87
5/12/2012	0	5/12/2012	0	5/12/2012	0	5/12/2012	0.04
5/13/2012	0	5/13/2012	0	5/13/2012	0	5/13/2012	0

5/14/2012	0	5/14/2012	0	5/14/2012	0	5/14/2012	0
5/15/2012	0.58	5/15/2012	0.83	5/15/2012	0.52	5/15/2012	0.44
5/16/2012	0	5/16/2012	0.72	5/16/2012	0	5/16/2012	0.54
5/17/2012	0	5/17/2012	0	5/17/2012	0	5/17/2012	0
5/18/2012	0	5/18/2012	0	5/18/2012	0	5/18/2012	0
5/19/2012	0	5/19/2012	0	5/19/2012	0	5/19/2012	0
5/20/2012	0	5/20/2012	0	5/20/2012	0	5/20/2012	0
5/21/2012	0	5/21/2012	0	5/21/2012	0	5/21/2012	0
5/22/2012	0	5/22/2012	0	5/22/2012	0	5/22/2012	0
5/23/2012	0	5/23/2012	0	5/23/2012	0	5/23/2012	0
5/24/2012	0	5/24/2012	0	5/24/2012	0	5/24/2012	0
5/25/2012	0	5/25/2012	0	5/25/2012	0	5/25/2012	0
5/26/2012	0	5/26/2012	0	5/26/2012	0	5/26/2012	0
5/27/2012	0	5/27/2012	0	5/27/2012	0	5/27/2012	0
5/28/2012	0	5/28/2012	0	5/28/2012	0	5/28/2012	0
5/29/2012	0	5/29/2012	0	5/29/2012	0	5/29/2012	0
5/30/2012	0	5/30/2012	0	5/30/2012	0	5/30/2012	0
5/31/2012	0	5/31/2012	0	5/31/2012	0	5/31/2012	0
6/1/2012	0	6/1/2012	0.02	6/1/2012	0.02	6/1/2012	0
6/2/2012	0	6/2/2012	0	6/2/2012	0	6/2/2012	0
6/3/2012	0	6/3/2012	0	6/3/2012	0	6/3/2012	0
6/4/2012	0	6/4/2012	0	6/4/2012	0	6/4/2012	0
6/5/2012	0	6/5/2012	0	6/5/2012	0	6/5/2012	0
6/6/2012	0	6/6/2012	0	6/6/2012	0	6/6/2012	0
6/7/2012	0	6/7/2012	0	6/7/2012	0	6/7/2012	0
6/8/2012	0.05	6/8/2012	0	6/8/2012	0	6/8/2012	0.075
6/9/2012	0.01	6/9/2012	0	6/9/2012	0	6/9/2012	0
6/10/2012	0	6/10/2012	0	6/10/2012	0	6/10/2012	0
6/11/2012	0	6/11/2012	0	6/11/2012	0	6/11/2012	0
6/12/2012	0	6/12/2012	0	6/12/2012	0	6/12/2012	0
6/13/2012	0	6/13/2012	0	6/13/2012	0	6/13/2012	0
6/14/2012	0	6/14/2012	0	6/14/2012	0	6/14/2012	0
6/15/2012	0	6/15/2012	0	6/15/2012	0	6/15/2012	0
6/16/2012	0	6/16/2012	0	6/16/2012	0	6/16/2012	0
6/17/2012	0	6/17/2012	0	6/17/2012	0	6/17/2012	0
6/18/2012	0	6/18/2012	0.03	6/18/2012	1.4	6/18/2012	0.1
6/19/2012	0	6/19/2012	0	6/19/2012	0	6/19/2012	0
6/20/2012	0.18	6/20/2012	0	6/20/2012	0	6/20/2012	0

6/21/2012	0.02	6/21/2012	0.68	6/21/2012	0	6/21/2012	0.36
6/22/2012	0	6/22/2012	0	6/22/2012	0	6/22/2012	0
6/23/2012	0	6/23/2012	0	6/23/2012	0	6/23/2012	0
6/24/2012	0	6/24/2012	0	6/24/2012	0	6/24/2012	0
6/25/2012	0	6/25/2012	0	6/25/2012	0	6/25/2012	0
6/26/2012	0	6/26/2012	0	6/26/2012	0	6/26/2012	0
6/27/2012	0	6/27/2012	0	6/27/2012	0	6/27/2012	0
6/28/2012	0	6/28/2012	0	6/28/2012	0	6/28/2012	0
6/29/2012	0	6/29/2012	0	6/29/2012	0	6/29/2012	0
6/30/2012	0	6/30/2012	0	6/30/2012	0	6/30/2012	0
7/1/2012	0	7/1/2012	0	7/1/2012	0.89	7/1/2012	0
7/2/2012	0	7/2/2012	0.05	7/2/2012	0.06	7/2/2012	0
7/3/2012	0	7/3/2012	0	7/3/2012	0	7/3/2012	0
7/4/2012	0	7/4/2012	0	7/4/2012	0	7/4/2012	0
7/5/2012	0	7/5/2012	0	7/5/2012	0	7/5/2012	0
7/6/2012	0	7/6/2012	0	7/6/2012	0	7/6/2012	0
7/7/2012	0	7/7/2012	0	7/7/2012	0	7/7/2012	0
7/8/2012	0	7/8/2012	0	7/8/2012	0	7/8/2012	0
7/9/2012	0.2	7/9/2012	0.64	7/9/2012	0.18	7/9/2012	0.24
7/10/2012	0.48	7/10/2012	0.37	7/10/2012	0.18	7/10/2012	0.45
7/11/2012	0.45	7/11/2012	1.91	7/11/2012	0.02	7/11/2012	1.18
7/12/2012	0	7/12/2012	1.16	7/12/2012	0.23	7/12/2012	0.38
7/13/2012	0	7/13/2012	0	7/13/2012	0	7/13/2012	0.01
7/14/2012	0	7/14/2012	0	7/14/2012	0	7/14/2012	0.27
7/15/2012	0	7/15/2012	0.42	7/15/2012	1.2	7/15/2012	0.15
7/16/2012	0.88	7/16/2012	0.04	7/16/2012	0.44	7/16/2012	1.66
7/17/2012	0	7/17/2012	0	7/17/2012	0	7/17/2012	0.02
7/18/2012	0	7/18/2012	0	7/18/2012	0.02	7/18/2012	0
7/19/2012	0	7/19/2012	0	7/19/2012	0	7/19/2012	0
7/20/2012	0	7/20/2012	0	7/20/2012	0	7/20/2012	0
7/21/2012	0	7/21/2012	0	7/21/2012	0	7/21/2012	0
7/22/2012	0	7/22/2012	0	7/22/2012	0	7/22/2012	0
7/23/2012	0	7/23/2012	0	7/23/2012	0	7/23/2012	0
7/24/2012	0	7/24/2012	0	7/24/2012	0	7/24/2012	0
7/25/2012	0	7/25/2012	0	7/25/2012	0	7/25/2012	0
7/26/2012	0	7/26/2012	0	7/26/2012	0	7/26/2012	0
7/27/2012	0	7/27/2012	0	7/27/2012	0	7/27/2012	0
7/28/2012	0	7/28/2012	0	7/28/2012	0.05	7/28/2012	0

7/29/2012	0	7/29/2012	0	7/29/2012	0	7/29/2012	0
7/30/2012	0	7/30/2012	0	7/30/2012	0	7/30/2012	0
7/31/2012	0	7/31/2012	0	7/31/2012	0	7/31/2012	0
8/1/2012	0	8/1/2012	0	8/1/2012	0	8/1/2012	0
8/2/2012	0	8/2/2012	0	8/2/2012	0	8/2/2012	0
8/3/2012	0	8/3/2012	0	8/3/2012	0	8/3/2012	0
8/4/2012	0	8/4/2012	0	8/4/2012	0	8/4/2012	0
8/5/2012	0	8/5/2012	0	8/5/2012	0	8/5/2012	0
8/6/2012	0	8/6/2012	0	8/6/2012	0	8/6/2012	0.03
8/7/2012	0	8/7/2012	0	8/7/2012	0	8/7/2012	0
8/8/2012	0	8/8/2012	0	8/8/2012	0	8/8/2012	0
8/9/2012	0	8/9/2012	0	8/9/2012	0	8/9/2012	0
8/10/2012	0	8/10/2012	0	8/10/2012	0	8/10/2012	0
8/11/2012	0	8/11/2012	0.06	8/11/2012	0.24	8/11/2012	0.1
8/12/2012	0	8/12/2012	0	8/12/2012	0	8/12/2012	0
8/13/2012	0	8/13/2012	0	8/13/2012	0	8/13/2012	0
8/14/2012	0.7	8/14/2012	0	8/14/2012	0	8/14/2012	0.91
8/15/2012	0	8/15/2012	0	8/15/2012	0	8/15/2012	0
8/16/2012	0	8/16/2012	0	8/16/2012	0	8/16/2012	0
8/17/2012	0	8/17/2012	0	8/17/2012	0	8/17/2012	0
8/18/2012	0	8/18/2012	0	8/18/2012	0	8/18/2012	0
8/19/2012	3.57	8/19/2012	1.52	8/19/2012	2.34	8/19/2012	0.06
8/20/2012	0	8/20/2012	0	8/20/2012	0	8/20/2012	0.01
8/21/2012	0.02	8/21/2012	0	8/21/2012	0	8/21/2012	0
8/22/2012	0	8/22/2012	0.07	8/22/2012	0	8/22/2012	0
8/23/2012	0	8/23/2012	0	8/23/2012	0	8/23/2012	0
8/24/2012	0	8/24/2012	0	8/24/2012	0	8/24/2012	0
8/25/2012	0.02	8/25/2012	0	8/25/2012	0	8/25/2012	0
8/26/2012	0.02	8/26/2012	0	8/26/2012	0	8/26/2012	0
8/27/2012	0	8/27/2012	0	8/27/2012	0	8/27/2012	0
8/28/2012	0	8/28/2012	0	8/28/2012	0	8/28/2012	0
8/29/2012	0	8/29/2012	0	8/29/2012	0	8/29/2012	0
8/30/2012	0	8/30/2012	0	8/30/2012	0	8/30/2012	0
8/31/2012	0	8/31/2012	0	8/31/2012	0	8/31/2012	0
9/1/2012	0	9/1/2012	0	9/1/2012	0	9/1/2012	0
9/2/2012	0	9/2/2012	0	9/2/2012	0	9/2/2012	0
9/3/2012	0	9/3/2012	0	9/3/2012	0	9/3/2012	0
9/4/2012	0	9/4/2012	0	9/4/2012	0	9/4/2012	0

9/5/2012	0	9/5/2012	0	9/5/2012	0	9/5/2012	0
9/6/2012	0	9/6/2012	0	9/6/2012	0	9/6/2012	0
9/7/2012	0	9/7/2012	0	9/7/2012	0	9/7/2012	0
9/8/2012	0	9/8/2012	0	9/8/2012	0	9/8/2012	0
9/9/2012	0	9/9/2012	0	9/9/2012	0	9/9/2012	0
9/10/2012	0	9/10/2012	0	9/10/2012	0	9/10/2012	0
9/11/2012	0	9/11/2012	0	9/11/2012	0	9/11/2012	0
9/12/2012	0	9/12/2012	0	9/12/2012	0	9/12/2012	0
9/13/2012	0	9/13/2012	0	9/13/2012	0	9/13/2012	0
9/14/2012	2.44	9/14/2012	0.82	9/14/2012	2.73	9/14/2012	3.59
9/15/2012	0	9/15/2012	0	9/15/2012	0	9/15/2012	0.05
9/16/2012	0.11	9/16/2012	0.66	9/16/2012	0.28	9/16/2012	0.05
9/17/2012	1.17	9/17/2012	0	9/17/2012	1.23	9/17/2012	1.89
9/18/2012	0	9/18/2012	0	9/18/2012	0	9/18/2012	0
9/19/2012	0	9/19/2012	0	9/19/2012	0	9/19/2012	0
9/20/2012	0	9/20/2012	0	9/20/2012	0	9/20/2012	0
9/21/2012	0	9/21/2012	0	9/21/2012	0	9/21/2012	0
9/22/2012	0	9/22/2012	0	9/22/2012	0	9/22/2012	0
9/23/2012	0	9/23/2012	0	9/23/2012	0	9/23/2012	0
9/24/2012	0	9/24/2012	0	9/24/2012	0	9/24/2012	0
9/25/2012	0	9/25/2012	0.01	9/25/2012	0	9/25/2012	0
9/26/2012	0	9/26/2012	0	9/26/2012	0	9/26/2012	0
9/27/2012	0	9/27/2012	0	9/27/2012	0	9/27/2012	0
9/28/2012	0	9/28/2012	0	9/28/2012	0	9/28/2012	0
9/29/2012	0.68	9/29/2012	2.68	9/29/2012	2.7	9/29/2012	0.35
9/30/2012	0.63	9/30/2012	0.38	9/30/2012	0.05	9/30/2012	0.48
10/1/2012	0	10/1/2012	0	10/1/2012	0	10/1/2012	0.04
10/2/2012	0	10/2/2012	0.18	10/2/2012	0.93	10/2/2012	0
10/3/2012	0	10/3/2012	0	10/3/2012	0	10/3/2012	0
10/4/2012	0	10/4/2012	0	10/4/2012	0	10/4/2012	0
10/5/2012	0	10/5/2012	0	10/5/2012	0	10/5/2012	0
10/6/2012	0	10/6/2012	0	10/6/2012	0	10/6/2012	0
10/7/2012	0	10/7/2012	0	10/7/2012	0	10/7/2012	0
10/8/2012	0	10/8/2012	0	10/8/2012	0	10/8/2012	0
10/9/2012	0	10/9/2012	0	10/9/2012	0	10/9/2012	0
10/10/2012	0	10/10/2012	0	10/10/2012	0	10/10/2012	0
10/11/2012	0	10/11/2012	0	10/11/2012	0.01	10/11/2012	0
10/12/2012	0.06	10/12/2012	0.67	10/12/2012	0.05	10/12/2012	0.19

10/13/2012	0	10/13/2012	0	10/13/2012	0.01	10/13/2012	0.02
10/14/2012	0.84	10/14/2012	0	10/14/2012	0	10/14/2012	0.55
10/15/2012	0	10/15/2012	0.22	10/15/2012	0	10/15/2012	0
10/16/2012	0	10/16/2012	0	10/16/2012	0	10/16/2012	0
10/17/2012	0	10/17/2012	0.02	10/17/2012	0	10/17/2012	0.07
10/18/2012	0	10/18/2012	0	10/18/2012	0	10/18/2012	0
10/19/2012	0	10/19/2012	0	10/19/2012	0	10/19/2012	0
10/20/2012	0	10/20/2012	0	10/20/2012	0	10/20/2012	0
10/21/2012	0	10/21/2012	0	10/21/2012	0	10/21/2012	0
10/22/2012	0	10/22/2012	0	10/22/2012	0	10/22/2012	0
10/23/2012	0	10/23/2012	0	10/23/2012	0	10/23/2012	0
10/24/2012	0	10/24/2012	0	10/24/2012	0	10/24/2012	0
10/25/2012	0	10/25/2012	0	10/25/2012	0	10/25/2012	0
10/26/2012	0	10/26/2012	0.08	10/26/2012	0.01	10/26/2012	0
10/27/2012	0	10/27/2012	0	10/27/2012	2.54	10/27/2012	0
10/28/2012	0	10/28/2012	0	10/28/2012	0	10/28/2012	0
10/29/2012	0	10/29/2012	0	10/29/2012	0	10/29/2012	0
10/30/2012	0	10/30/2012	0	10/30/2012	0	10/30/2012	0
10/31/2012	0	10/31/2012	0	10/31/2012	0	10/31/2012	0
11/1/2012	0	11/1/2012	0	11/1/2012	0	11/1/2012	0
11/2/2012	0	11/2/2012	0	11/2/2012	0	11/2/2012	0
11/3/2012	0	11/3/2012	0	11/3/2012	0	11/3/2012	0
11/4/2012	0	11/4/2012	0	11/4/2012	0	11/4/2012	0
11/5/2012	0	11/5/2012	0	11/5/2012	0	11/5/2012	0
11/6/2012	0	11/6/2012	0	11/6/2012	0	11/6/2012	0
11/7/2012	0	11/7/2012	0	11/7/2012	0	11/7/2012	0
11/8/2012	0	11/8/2012	0	11/8/2012	0	11/8/2012	0
11/9/2012	0	11/9/2012	0	11/9/2012	0	11/9/2012	0
11/10/2012	0	11/10/2012	0	11/10/2012	0	11/10/2012	0
11/11/2012	0	11/11/2012	0	11/11/2012	0	11/11/2012	0
11/12/2012	0	11/12/2012	0	11/12/2012	0	11/12/2012	0
11/13/2012	0	11/13/2012	0	11/13/2012	0	11/13/2012	0
11/14/2012	0	11/14/2012	0.04	11/14/2012	0	11/14/2012	0
11/15/2012	0	11/15/2012	0	11/15/2012	0	11/15/2012	0
11/16/2012	0	11/16/2012	0	11/16/2012	0	11/16/2012	0
11/17/2012	0	11/17/2012	0	11/17/2012	0	11/17/2012	0
11/18/2012	0	11/18/2012	0	11/18/2012	0	11/18/2012	0
11/19/2012	0	11/19/2012	0	11/19/2012	0	11/19/2012	0

11/20/2012	0	11/20/2012	0	11/20/2012	0	11/20/2012	0
11/21/2012	0	11/21/2012	0	11/21/2012	0	11/21/2012	0
11/22/2012	0	11/22/2012	0	11/22/2012	0	11/22/2012	0
11/23/2012	0	11/23/2012	0	11/23/2012	0	11/23/2012	0
11/24/2012	0	11/24/2012	0	11/24/2012	0	11/24/2012	0
11/25/2012	0	11/25/2012	0	11/25/2012	0	11/25/2012	0
11/26/2012	0	11/26/2012	0	11/26/2012	0	11/26/2012	0
11/27/2012	0.11	11/27/2012	0.19	11/27/2012	0	11/27/2012	0
11/28/2012	0	11/28/2012	0	11/28/2012	0	11/28/2012	0
11/29/2012	0	11/29/2012	0	11/29/2012	0	11/29/2012	0
11/30/2012	0	11/30/2012	0	11/30/2012	0	11/30/2012	0
12/1/2012	0	12/1/2012	0	12/1/2012	0	12/1/2012	0
12/2/2012	0	12/2/2012	0	12/2/2012	0	12/2/2012	0
12/3/2012	0	12/3/2012	0	12/3/2012	0	12/3/2012	0
12/4/2012	0.03	12/4/2012	0	12/4/2012	0	12/4/2012	0.02
12/5/2012	0	12/5/2012	0.03	12/5/2012	0	12/5/2012	0
12/6/2012	0	12/6/2012	0	12/6/2012	0	12/6/2012	0
12/7/2012	0	12/7/2012	0	12/7/2012	0	12/7/2012	0
12/8/2012	0	12/8/2012	0	12/8/2012	0	12/8/2012	0
12/9/2012	0	12/9/2012	0	12/9/2012	0	12/9/2012	0
12/10/2012	0	12/10/2012	0.09	12/10/2012	0	12/10/2012	0
12/11/2012	0	12/11/2012	0	12/11/2012	0	12/11/2012	0
12/12/2012	0	12/12/2012	0	12/12/2012	0	12/12/2012	0
12/13/2012	0	12/13/2012	0	12/13/2012	0	12/13/2012	0
12/14/2012	0	12/14/2012	0	12/14/2012	0.03	12/14/2012	0
12/15/2012	0.04	12/15/2012	0.04	12/15/2012	0.15	12/15/2012	0
12/16/2012	0.07	12/16/2012	0.03	12/16/2012	0.04	12/16/2012	0.04
12/17/2012	0	12/17/2012	0	12/17/2012	0	12/17/2012	0
12/18/2012	0	12/18/2012	0	12/18/2012	0	12/18/2012	0
12/19/2012	0	12/19/2012	0	12/19/2012	0	12/19/2012	0
12/20/2012	0	12/20/2012	0	12/20/2012	0	12/20/2012	0
12/21/2012	0	12/21/2012	0	12/21/2012	0	12/21/2012	0
12/22/2012	0	12/22/2012	0	12/22/2012	0	12/22/2012	0
12/23/2012	0	12/23/2012	0	12/23/2012	0	12/23/2012	0
12/24/2012	0	12/24/2012	0	12/24/2012	0	12/24/2012	0
12/25/2012	0	12/25/2012	0	12/25/2012	0	12/25/2012	0
12/26/2012	0	12/26/2012	0	12/26/2012	0	12/26/2012	0
12/27/2012	0	12/27/2012	0	12/27/2012	0	12/27/2012	0

12/28/2012	0	12/28/2012	0	12/28/2012	0	12/28/2012	0.02
12/29/2012	0	12/29/2012	0	12/29/2012	0	12/29/2012	0
12/30/2012	0	12/30/2012	0	12/30/2012	0	12/30/2012	0
12/31/2012	0	12/31/2012	0.11	12/31/2012	0.2	12/31/2012	0.11
1/1/2013	0.25	1/1/2013	0.36	1/1/2013	0.1	1/1/2013	0.25
1/2/2013	0	1/2/2013	0.01	1/2/2013	0.02	1/2/2013	0
1/3/2013	0	1/3/2013	0	1/3/2013	0	1/3/2013	0
1/4/2013	0.19	1/4/2013	0.07	1/4/2013	0.09	1/4/2013	0.105
1/5/2013	0.29	1/5/2013	0.11	1/5/2013	0.2	1/5/2013	0.23
1/6/2013	0	1/6/2013	0.03	1/6/2013	0	1/6/2013	0
1/7/2013	0	1/7/2013	0	1/7/2013	0	1/7/2013	0
1/8/2013	0.06	1/8/2013	0.16	1/8/2013	0.2	1/8/2013	0.12
1/9/2013	2.71	1/9/2013	1.92	1/9/2013	2.8	1/9/2013	2.61
1/10/2013	0.67	1/10/2013	0.07	1/10/2013	0.05	1/10/2013	0.175
1/11/2013	0	1/11/2013	0	1/11/2013	0	1/11/2013	0
1/12/2013	0	1/12/2013	0.02	1/12/2013	0.03	1/12/2013	0.02
1/13/2013	0	1/13/2013	0	1/13/2013	0	1/13/2013	0
1/14/2013	0	1/14/2013	0	1/14/2013	0	1/14/2013	0
1/15/2013	0.06	1/15/2013	0.02	1/15/2013	0.01	1/15/2013	0.05
1/16/2013	0.02	1/16/2013	0	1/16/2013	0	1/16/2013	0
1/17/2013	0	1/17/2013	0	1/17/2013	0	1/17/2013	0
1/18/2013	0	1/18/2013	0	1/18/2013	0	1/18/2013	0
1/19/2013	0	1/19/2013	0	1/19/2013	0	1/19/2013	0
1/20/2013	0	1/20/2013	0	1/20/2013	0	1/20/2013	0
1/21/2013	0	1/21/2013	0	1/21/2013	0	1/21/2013	0
1/22/2013	0	1/22/2013	0	1/22/2013	0	1/22/2013	0
1/23/2013	0	1/23/2013	0	1/23/2013	0	1/23/2013	0
1/24/2013	0	1/24/2013	0	1/24/2013	0	1/24/2013	0.01
1/25/2013	0	1/25/2013	0	1/25/2013	0	1/25/2013	0
1/26/2013	0	1/26/2013	0	1/26/2013	0	1/26/2013	0
1/27/2013	0	1/27/2013	0.01	1/27/2013	0.01	1/27/2013	0
1/28/2013	0	1/28/2013	0.01	1/28/2013	0.01	1/28/2013	0
1/29/2013	0	1/29/2013	0	1/29/2013	0	1/29/2013	0
1/30/2013	0	1/30/2013	0	1/30/2013	0	1/30/2013	0
1/31/2013	0	1/31/2013	0	1/31/2013	0	1/31/2013	0
2/1/2013	0	2/1/2013	0	2/1/2013	0	2/1/2013	0
2/2/2013	0	2/2/2013	0	2/2/2013	0	2/2/2013	0
2/3/2013	0	2/3/2013	0	2/3/2013	0	2/3/2013	0

2/4/2013	0.02	2/4/2013	0	2/4/2013	0	2/4/2013	0
2/5/2013	0	2/5/2013	0.01	2/5/2013	0	2/5/2013	0
2/6/2013	0	2/6/2013	0.06	2/6/2013	0.02	2/6/2013	0.04
2/7/2013	0	2/7/2013	0	2/7/2013	0.02	2/7/2013	0
2/8/2013	0	2/8/2013	0	2/8/2013	0	2/8/2013	0
2/9/2013	0	2/9/2013	0	2/9/2013	0	2/9/2013	0
2/10/2013	0.36	2/10/2013	0.11	2/10/2013	0.12	2/10/2013	0.065
2/11/2013	0.02	2/11/2013	0.03	2/11/2013	0	2/11/2013	0
2/12/2013	0	2/12/2013	0.03	2/12/2013	0.06	2/12/2013	0.12
2/13/2013	0	2/13/2013	0	2/13/2013	0	2/13/2013	0
2/14/2013	0	2/14/2013	0	2/14/2013	0	2/14/2013	0
2/15/2013	0	2/15/2013	0	2/15/2013	0	2/15/2013	0
2/16/2013	0	2/16/2013	0	2/16/2013	0	2/16/2013	0
2/17/2013	0	2/17/2013	0	2/17/2013	0	2/17/2013	0
2/18/2013	0	2/18/2013	0	2/18/2013	0	2/18/2013	0
2/19/2013	0	2/19/2013	0	2/19/2013	0	2/19/2013	0
2/20/2013	0	2/20/2013	0	2/20/2013	0	2/20/2013	0
2/21/2013	0.23	2/21/2013	0.02	2/21/2013	0.03	2/21/2013	0.04
2/22/2013	0.13	2/22/2013	0	2/22/2013	0	2/22/2013	0
2/23/2013	0.03	2/23/2013	0	2/23/2013	0	2/23/2013	0
2/24/2013	0	2/24/2013	0	2/24/2013	0	2/24/2013	0
2/25/2013	0.02	2/25/2013	0.01	2/25/2013	0	2/25/2013	0
2/26/2013	0	2/26/2013	0	2/26/2013	0	2/26/2013	0
2/27/2013	0	2/27/2013	0	2/27/2013	0	2/27/2013	0
2/28/2013	0	2/28/2013	1.26	2/28/2013	0	2/28/2013	0
3/1/2013	0	3/1/2013	0	3/1/2013	0	3/1/2013	0
3/2/2013	0	3/2/2013	0	3/2/2013	0	3/2/2013	0
3/3/2013	0	3/3/2013	0	3/3/2013	0	3/3/2013	0
3/4/2013	0	3/4/2013	0	3/4/2013	0	3/4/2013	0
3/5/2013	0	3/5/2013	0	3/5/2013	0	3/5/2013	0
3/6/2013	0	3/6/2013	0	3/6/2013	0	3/6/2013	0
3/7/2013	0	3/7/2013	0	3/7/2013	0	3/7/2013	0
3/8/2013	0	3/8/2013	0	3/8/2013	0.02	3/8/2013	0
3/9/2013	0.08	3/9/2013	0.07	3/9/2013	0.09	3/9/2013	0.05
3/10/2013	0.72	3/10/2013	0.69	3/10/2013	0.58	3/10/2013	1.2
3/11/2013	0	3/11/2013	0	3/11/2013	0	3/11/2013	0
3/12/2013	0	3/12/2013	0	3/12/2013	0	3/12/2013	0
3/13/2013	0	3/13/2013	0	3/13/2013	0	3/13/2013	0

3/14/2013	0	3/14/2013	0	3/14/2013	0	3/14/2013	0
3/15/2013	0	3/15/2013	0	3/15/2013	0	3/15/2013	0
3/16/2013	0	3/16/2013	0	3/16/2013	0	3/16/2013	0
3/17/2013	0	3/17/2013	0	3/17/2013	0	3/17/2013	0
3/18/2013	0	3/18/2013	0	3/18/2013	0	3/18/2013	0
3/19/2013	0	3/19/2013	0	3/19/2013	0	3/19/2013	0
3/20/2013	0.16	3/20/2013	0	3/20/2013	0	3/20/2013	0.24
3/21/2013	0	3/21/2013	0	3/21/2013	0	3/21/2013	0
3/22/2013	0	3/22/2013	0	3/22/2013	0	3/22/2013	0
3/23/2013	0	3/23/2013	0	3/23/2013	0	3/23/2013	0
3/24/2013	0	3/24/2013	0	3/24/2013	0	3/24/2013	0
3/25/2013	0	3/25/2013	0	3/25/2013	0	3/25/2013	0
3/26/2013	0	3/26/2013	0	3/26/2013	0	3/26/2013	0
3/27/2013	0	3/27/2013	0	3/27/2013	0	3/27/2013	0
3/28/2013	0	3/28/2013	0	3/28/2013	0	3/28/2013	0
3/29/2013	0	3/29/2013	0	3/29/2013	0	3/29/2013	0
3/30/2013	0	3/30/2013	0	3/30/2013	0	3/30/2013	0
3/31/2013	0	3/31/2013	0	3/31/2013	0	3/31/2013	0
4/1/2013	0.19	4/1/2013	0.11	4/1/2013	0.78	4/1/2013	0
4/2/2013	0.06	4/2/2013	0	4/2/2013	0.03	4/2/2013	0
4/3/2013	0	4/3/2013	0.87	4/3/2013	1.1	4/3/2013	3.14
4/4/2013	0	4/4/2013	0.12	4/4/2013	0.1	4/4/2013	0.215
4/5/2013	0	4/5/2013	0	4/5/2013	0	4/5/2013	0
4/6/2013	0	4/6/2013	0	4/6/2013	0	4/6/2013	0
4/7/2013	0	4/7/2013	0	4/7/2013	0	4/7/2013	0
4/8/2013	0	4/8/2013	0	4/8/2013	0	4/8/2013	0
4/9/2013	0	4/9/2013	0	4/9/2013	0	4/9/2013	0
4/10/2013	0.07	4/10/2013	0	4/10/2013	0.01	4/10/2013	0.07
4/11/2013	0.17	4/11/2013	0.27	4/11/2013	0	4/11/2013	0.29
4/12/2013	0	4/12/2013	0	4/12/2013	0	4/12/2013	0.01
4/13/2013	0	4/13/2013	0	4/13/2013	0	4/13/2013	0
4/14/2013	0	4/14/2013	0	4/14/2013	0	4/14/2013	0
4/15/2013	0	4/15/2013	0	4/15/2013	0	4/15/2013	0
4/16/2013	0	4/16/2013	0	4/16/2013	0	4/16/2013	0
4/17/2013	0	4/17/2013	0	4/17/2013	0	4/17/2013	0
4/18/2013	0.2	4/18/2013	0	4/18/2013	0.09	4/18/2013	0.085
4/19/2013	0	4/19/2013	0.22	4/19/2013	0	4/19/2013	0.02
4/20/2013	0	4/20/2013	0	4/20/2013	0	4/20/2013	0

4/21/2013	0	4/21/2013	0	4/21/2013	0	4/21/2013	0
4/22/2013	0	4/22/2013	0	4/22/2013	0	4/22/2013	0
4/23/2013	0	4/23/2013	0	4/23/2013	0	4/23/2013	0
4/24/2013	0	4/24/2013	0	4/24/2013	0	4/24/2013	0.01
4/25/2013	0	4/25/2013	0	4/25/2013	0	4/25/2013	0
4/26/2013	0	4/26/2013	0	4/26/2013	0	4/26/2013	0
4/27/2013	0.04	4/27/2013	0.01	4/27/2013	0.01	4/27/2013	0
4/28/2013	0	4/28/2013	0.43	4/28/2013	0	4/28/2013	0.01
4/29/2013	0.34	4/29/2013	0	4/29/2013	0	4/29/2013	0
4/30/2013	0.01	4/30/2013	0.15	4/30/2013	0.37	4/30/2013	0
5/1/2013	0	5/1/2013	0	5/1/2013	0	5/1/2013	0
5/2/2013	0	5/2/2013	0.52	5/2/2013	0.53	5/2/2013	0.315
5/3/2013	0	5/3/2013	0	5/3/2013	0	5/3/2013	0
5/4/2013	0	5/4/2013	0	5/4/2013	0	5/4/2013	0
5/5/2013	0	5/5/2013	0	5/5/2013	0	5/5/2013	0
5/6/2013	0	5/6/2013	0	5/6/2013	0	5/6/2013	0
5/7/2013	0	5/7/2013	0	5/7/2013	0	5/7/2013	0
5/8/2013	0	5/8/2013	0	5/8/2013	0	5/8/2013	0.07
5/9/2013	0	5/9/2013	0	5/9/2013	0	5/9/2013	0
5/10/2013	0.12	5/10/2013	0.59	5/10/2013	0.36	5/10/2013	0.24
5/11/2013	0.1	5/11/2013	0.57	5/11/2013	0.07	5/11/2013	1.50
5/12/2013	0.09	5/12/2013	0	5/12/2013	0	5/12/2013	0
5/13/2013	0	5/13/2013	0	5/13/2013	0	5/13/2013	0
5/14/2013	0	5/14/2013	0	5/14/2013	0	5/14/2013	0
5/15/2013	0.4	5/15/2013	0	5/15/2013	1.7	5/15/2013	0.85
5/16/2013	0.69	5/16/2013	0.03	5/16/2013	0.04	5/16/2013	0.11
5/17/2013	0	5/17/2013	0	5/17/2013	0.01	5/17/2013	0.01
5/18/2013	0	5/18/2013	0	5/18/2013	0	5/18/2013	0
5/19/2013	0	5/19/2013	0	5/19/2013	0	5/19/2013	0
5/20/2013	0	5/20/2013	0	5/20/2013	0	5/20/2013	0
5/21/2013	0	5/21/2013	0	5/21/2013	0	5/21/2013	0
5/22/2013	0.02	5/22/2013	0	5/22/2013	0	5/22/2013	0
5/23/2013	0	5/23/2013	0	5/23/2013	0	5/23/2013	0
5/24/2013	0	5/24/2013	0	5/24/2013	0	5/24/2013	0
5/25/2013	0.79	5/25/2013	1.78	5/25/2013	3.8	5/25/2013	2.19
5/26/2013	0.4	5/26/2013	1.41	5/26/2013	0.75	5/26/2013	0.54
5/27/2013	0	5/27/2013	0.32	5/27/2013	0.08	5/27/2013	0
5/28/2013	0	5/28/2013	0	5/28/2013	0	5/28/2013	0

5/29/2013	0	5/29/2013	0	5/29/2013	0	5/29/2013	0
5/30/2013	0	5/30/2013	0	5/30/2013	0.06	5/30/2013	0.03
5/31/2013	0	5/31/2013	0	5/31/2013	0	5/31/2013	0
6/1/2013	0	6/1/2013	0	6/1/2013	0	6/1/2013	0
6/2/2013	0.03	6/2/2013	0.22	6/2/2013	0.4	6/2/2013	0.58
6/3/2013	0	6/3/2013	0	6/3/2013	0	6/3/2013	0
6/4/2013	0	6/4/2013	0	6/4/2013	0	6/4/2013	0
6/5/2013	0	6/5/2013	0	6/5/2013	0	6/5/2013	0
6/6/2013	0	6/6/2013	0	6/6/2013	0	6/6/2013	0
6/7/2013	0	6/7/2013	0	6/7/2013	0.01	6/7/2013	0
6/8/2013	0	6/8/2013	0	6/8/2013	0	6/8/2013	0
6/9/2013	0.18	6/9/2013	0	6/9/2013	0.6	6/9/2013	0
6/10/2013	0	6/10/2013	0.27	6/10/2013	0	6/10/2013	0
6/11/2013	0	6/11/2013	0	6/11/2013	0	6/11/2013	0
6/12/2013	0	6/12/2013	0	6/12/2013	0	6/12/2013	0
6/13/2013	0	6/13/2013	0.02	6/13/2013	0.25	6/13/2013	0
6/14/2013	0	6/14/2013	0.52	6/14/2013	0.02	6/14/2013	0
6/15/2013	0	6/15/2013	0.02	6/15/2013	0.11	6/15/2013	0
6/16/2013	0	6/16/2013	0	6/16/2013	0	6/16/2013	0
6/17/2013	0	6/17/2013	0	6/17/2013	0	6/17/2013	0
6/18/2013	0.72	6/18/2013	0	6/18/2013	0	6/18/2013	0.27
6/19/2013	0	6/19/2013	0	6/19/2013	0	6/19/2013	0
6/20/2013	0	6/20/2013	0	6/20/2013	0	6/20/2013	0
6/21/2013	0	6/21/2013	0	6/21/2013	0	6/21/2013	0
6/22/2013	0	6/22/2013	0	6/22/2013	0	6/22/2013	0
6/23/2013	0	6/23/2013	0	6/23/2013	0	6/23/2013	0
6/24/2013	0	6/24/2013	0	6/24/2013	0	6/24/2013	0
6/25/2013	0	6/25/2013	0	6/25/2013	0	6/25/2013	0
6/26/2013	0	6/26/2013	0	6/26/2013	0	6/26/2013	0
6/27/2013	0	6/27/2013	0	6/27/2013	0	6/27/2013	0
6/28/2013	0	6/28/2013	0	6/28/2013	0	6/28/2013	0
6/29/2013	0	6/29/2013	0	6/29/2013	0	6/29/2013	0
6/30/2013	0.15	6/30/2013	0.02	6/30/2013	0.38	6/30/2013	0.14
7/1/2013	0	7/1/2013	0.31	7/1/2013	0	7/1/2013	0.08
7/2/2013	0	7/2/2013	0	7/2/2013	0	7/2/2013	0
7/3/2013	0	7/3/2013	0	7/3/2013	0	7/3/2013	0
7/4/2013	0	7/4/2013	0	7/4/2013	0	7/4/2013	0
7/5/2013	0	7/5/2013	0	7/5/2013	0	7/5/2013	0

7/6/2013	0	7/6/2013	0	7/6/2013	0	7/6/2013	0
7/7/2013	0	7/7/2013	0	7/7/2013	0	7/7/2013	0
7/8/2013	0	7/8/2013	0	7/8/2013	0.04	7/8/2013	0.08
7/9/2013	0.79	7/9/2013	0.13	7/9/2013	0.03	7/9/2013	0.01
7/10/2013	0	7/10/2013	0	7/10/2013	0	7/10/2013	0
7/11/2013	0	7/11/2013	0	7/11/2013	0	7/11/2013	0
7/12/2013	0	7/12/2013	0	7/12/2013	0	7/12/2013	0
7/13/2013	0	7/13/2013	0	7/13/2013	0	7/13/2013	0
7/14/2013	0	7/14/2013	0	7/14/2013	0	7/14/2013	0
7/15/2013	0.64	7/15/2013	0.57	7/15/2013	0	7/15/2013	0.05
7/16/2013	1.48	7/16/2013	1.54	7/16/2013	0.01	7/16/2013	2.18
7/17/2013	0.63	7/17/2013	1.27	7/17/2013	1.08	7/17/2013	0.08
7/18/2013	0.08	7/18/2013	0.67	7/18/2013	0.19	7/18/2013	0.42
7/19/2013	0	7/19/2013	0.02	7/19/2013	0	7/19/2013	0.17
7/20/2013	0	7/20/2013	0	7/20/2013	0	7/20/2013	0
7/21/2013	0	7/21/2013	0	7/21/2013	0	7/21/2013	0
7/22/2013	0	7/22/2013	0	7/22/2013	0	7/22/2013	0
7/23/2013	0	7/23/2013	0	7/23/2013	0	7/23/2013	0
7/24/2013	0	7/24/2013	0	7/24/2013	0	7/24/2013	0
7/25/2013	0	7/25/2013	0	7/25/2013	0	7/25/2013	0
7/26/2013	0	7/26/2013	0	7/26/2013	0	7/26/2013	0
7/27/2013	1.12	7/27/2013	0.03	7/27/2013	0.01	7/27/2013	0.39
7/28/2013	0	7/28/2013	0	7/28/2013	0	7/28/2013	0.01
7/29/2013	0	7/29/2013	0	7/29/2013	0	7/29/2013	0
7/30/2013	0	7/30/2013	0	7/30/2013	0	7/30/2013	0
7/31/2013	0	7/31/2013	0	7/31/2013	0	7/31/2013	0
8/1/2013	0	8/1/2013	0	8/1/2013	0	8/1/2013	0
8/2/2013	0	8/2/2013	0	8/2/2013	0	8/2/2013	0
8/3/2013	0	8/3/2013	0	8/3/2013	0	8/3/2013	0
8/4/2013	0	8/4/2013	0	8/4/2013	0	8/4/2013	0
8/5/2013	0	8/5/2013	0	8/5/2013	0	8/5/2013	0
8/6/2013	0	8/6/2013	0	8/6/2013	0	8/6/2013	0
8/7/2013	0	8/7/2013	0	8/7/2013	0	8/7/2013	0
8/8/2013	0	8/8/2013	0	8/8/2013	0	8/8/2013	0
8/9/2013	0	8/9/2013	0	8/9/2013	0	8/9/2013	0
8/10/2013	0	8/10/2013	0	8/10/2013	0	8/10/2013	0
8/11/2013	0.4	8/11/2013	0	8/11/2013	0	8/11/2013	0
8/12/2013	0.15	8/12/2013	0.02	8/12/2013	0.11	8/12/2013	0

8/13/2013	0	8/13/2013	0	8/13/2013	0	8/13/2013	0
8/14/2013	0	8/14/2013	0	8/14/2013	0	8/14/2013	0
8/15/2013	0.3	8/15/2013	0	8/15/2013	0	8/15/2013	0
8/16/2013	0	8/16/2013	0	8/16/2013	0.02	8/16/2013	0.44
8/17/2013	0	8/17/2013	0	8/17/2013	0	8/17/2013	0
8/18/2013	0	8/18/2013	0	8/18/2013	0	8/18/2013	0
8/19/2013	0	8/19/2013	0	8/19/2013	0	8/19/2013	0
8/20/2013	0	8/20/2013	0	8/20/2013	0	8/20/2013	0
8/21/2013	0	8/21/2013	0	8/21/2013	0	8/21/2013	0
8/22/2013	0	8/22/2013	0.02	8/22/2013	0.1	8/22/2013	0
8/23/2013	0	8/23/2013	0	8/23/2013	0	8/23/2013	0.1
8/24/2013	0	8/24/2013	0	8/24/2013	0	8/24/2013	0
8/25/2013	0	8/25/2013	0	8/25/2013	0	8/25/2013	0
8/26/2013	0	8/26/2013	0	8/26/2013	0	8/26/2013	0
8/27/2013	0	8/27/2013	0.91	8/27/2013	0.33	8/27/2013	0
8/28/2013	0.04	8/28/2013	0.29	8/28/2013	0	8/28/2013	0.1
8/29/2013	0	8/29/2013	0	8/29/2013	0	8/29/2013	0
8/30/2013	0	8/30/2013	0	8/30/2013	0	8/30/2013	0
8/31/2013	0	8/31/2013	0	8/31/2013	0	8/31/2013	0
9/1/2013	0	9/1/2013	0	9/1/2013	0	9/1/2013	0
9/2/2013	0	9/2/2013	0	9/2/2013	0	9/2/2013	0
9/3/2013	0.04	9/3/2013	0	9/3/2013	0.04	9/3/2013	0.36
9/4/2013	0.45	9/4/2013	0.03	9/4/2013	0.15	9/4/2013	0
9/5/2013	0.3	9/5/2013	0.38	9/5/2013	0	9/5/2013	0
9/6/2013	0	9/6/2013	0.11	9/6/2013	0	9/6/2013	0
9/7/2013	0	9/7/2013	0	9/7/2013	0	9/7/2013	0
9/8/2013	0	9/8/2013	0	9/8/2013	0	9/8/2013	0
9/9/2013	0	9/9/2013	0.47	9/9/2013	0.12	9/9/2013	0
9/10/2013	0.37	9/10/2013	0.06	9/10/2013	0.78	9/10/2013	0.1
9/11/2013	0	9/11/2013	0.02	9/11/2013	0.37	9/11/2013	0.01
9/12/2013	0	9/12/2013	0	9/12/2013	0.25	9/12/2013	0
9/13/2013	0	9/13/2013	0	9/13/2013	0	9/13/2013	0
9/14/2013	0	9/14/2013	0	9/14/2013	0	9/14/2013	0
9/15/2013	0	9/15/2013	0.01	9/15/2013	0.06	9/15/2013	0
9/16/2013	0	9/16/2013	0	9/16/2013	0	9/16/2013	0
9/17/2013	0	9/17/2013	0.52	9/17/2013	0.83	9/17/2013	0.02
9/18/2013	0	9/18/2013	0	9/18/2013	0	9/18/2013	0
9/19/2013	0	9/19/2013	0	9/19/2013	0.04	9/19/2013	0

9/20/2013	0.89	9/20/2013	0.54	9/20/2013	0.28	9/20/2013	1.48
9/21/2013	1.3	9/21/2013	0.66	9/21/2013	1.33	9/21/2013	3.32
9/22/2013	0	9/22/2013	0	9/22/2013	0	9/22/2013	0
9/23/2013	0	9/23/2013	0	9/23/2013	0	9/23/2013	0
9/24/2013	0	9/24/2013	0	9/24/2013	0	9/24/2013	0
9/25/2013	0	9/25/2013	0	9/25/2013	0	9/25/2013	0
9/26/2013	0	9/26/2013	0	9/26/2013	0	9/26/2013	0
9/27/2013	0	9/27/2013	0	9/27/2013	0	9/27/2013	0
9/28/2013	0.07	9/28/2013	0.06	9/28/2013	0	9/28/2013	0.02
9/29/2013	0.11	9/29/2013	3.01	9/29/2013	3.04	9/29/2013	1.53
9/30/2013	0	9/30/2013	0.02	9/30/2013	0	9/30/2013	0.04
10/1/2013	0	10/1/2013	0	10/1/2013	0	10/1/2013	0
10/2/2013	0	10/2/2013	0.06	10/2/2013	0	10/2/2013	0
10/3/2013	0	10/3/2013	0.31	10/3/2013	0	10/3/2013	0
10/4/2013	0	10/4/2013	0	10/4/2013	0	10/4/2013	0
10/5/2013	0	10/5/2013	0	10/5/2013	0	10/5/2013	0
10/6/2013	0.26	10/6/2013	0.33	10/6/2013	0.17	10/6/2013	0.7
10/7/2013	0	10/7/2013	0	10/7/2013	0	10/7/2013	0
10/8/2013	0	10/8/2013	0	10/8/2013	0	10/8/2013	0
10/9/2013	0	10/9/2013	0	10/9/2013	0	10/9/2013	0
10/10/2013	0	10/10/2013	0	10/10/2013	0	10/10/2013	0
10/11/2013	0	10/11/2013	0	10/11/2013	0	10/11/2013	0
10/12/2013	0.03	10/12/2013	0	10/12/2013	0	10/12/2013	0.07
10/13/2013	0.82	10/13/2013	0.39	10/13/2013	0.7	10/13/2013	6.5
10/14/2013	0	10/14/2013	1.12	10/14/2013	0	10/14/2013	0.21
10/15/2013	0.23	10/15/2013	0.04	10/15/2013	0.07	10/15/2013	0
10/16/2013	0.82	10/16/2013	0.03	10/16/2013	0.96	10/16/2013	0.98
10/17/2013	0.31	10/17/2013	1.03	10/17/2013	0.13	10/17/2013	0.07
10/18/2013	0	10/18/2013	0	10/18/2013	0	10/18/2013	0.02
10/19/2013	0	10/19/2013	0.03	10/19/2013	0.01	10/19/2013	0
10/20/2013	0	10/20/2013	0	10/20/2013	0	10/20/2013	0
10/21/2013	0	10/21/2013	0	10/21/2013	0	10/21/2013	0
10/22/2013	0	10/22/2013	0.09	10/22/2013	0.03	10/22/2013	0
10/23/2013	0	10/23/2013	0	10/23/2013		10/23/2013	0
10/24/2013	0	10/24/2013	0	10/24/2013	0	10/24/2013	0
10/25/2013	0	10/25/2013	0	10/25/2013	0	10/25/2013	0
10/26/2013	0	10/26/2013	0	10/26/2013	0	10/26/2013	0
10/27/2013	0.09	10/27/2013	0	10/27/2013	0	10/27/2013	0.5

10/28/2013	0	10/28/2013	0.07	10/28/2013	0	10/28/2013	0.01
10/29/2013	0.85	10/29/2013	0	10/29/2013	0	10/29/2013	0
10/30/2013	0	10/30/2013	0.02	10/30/2013	0.1	10/30/2013	0.05
10/31/2013	1.62	10/31/2013	1.07	10/31/2013	0.79	10/31/2013	1.16
11/1/2013	0	11/1/2013	0	11/1/2013	0	11/1/2013	0
11/2/2013	0	11/2/2013	0	11/2/2013	0	11/2/2013	0
11/3/2013	0	11/3/2013	0	11/3/2013	0	11/3/2013	0
11/4/2013	0.01	11/4/2013	0	11/4/2013	0.02	11/4/2013	0.02
11/5/2013	0.05	11/5/2013	0.04	11/5/2013	0.02	11/5/2013	0.03
11/6/2013	0.49	11/6/2013	0.02	11/6/2013	0.04	11/6/2013	1.38
11/7/2013	0	11/7/2013	0	11/7/2013	0.07	11/7/2013	0.09
11/8/2013	0	11/8/2013	0	11/8/2013	0	11/8/2013	0
11/9/2013	0	11/9/2013	0.06	11/9/2013	0.09	11/9/2013	0
11/10/2013	0	11/10/2013	0.06	11/10/2013	0	11/10/2013	0.01
11/11/2013	0	11/11/2013	0	11/11/2013	0	11/11/2013	0
11/12/2013	0	11/12/2013	0	11/12/2013	0	11/12/2013	0
11/13/2013	0	11/13/2013	0	11/13/2013	0	11/13/2013	0
11/14/2013	0	11/14/2013	0	11/14/2013	0	11/14/2013	0
11/15/2013	0	11/15/2013	0	11/15/2013	0	11/15/2013	0
11/16/2013	0	11/16/2013	0	11/16/2013	0	11/16/2013	0
11/17/2013	0	11/17/2013	0	11/17/2013	0	11/17/2013	0
11/18/2013	0	11/18/2013	0	11/18/2013	0	11/18/2013	0
11/19/2013	0	11/19/2013	0	11/19/2013	0	11/19/2013	0
11/20/2013	0	11/20/2013	0	11/20/2013	0	11/20/2013	0
11/21/2013	0	11/21/2013	0.02	11/21/2013	0.04	11/21/2013	0
11/22/2013	2.5	11/22/2013	0.1	11/22/2013	0.84	11/22/2013	0.22
11/23/2013	0.89	11/23/2013	0.17	11/23/2013	0.03	11/23/2013	0.48
11/24/2013	0.1	11/24/2013	0.01	11/24/2013	0.03	11/24/2013	0.02
11/25/2013	0.47	11/25/2013	0.79	11/25/2013	1.45	11/25/2013	0.78
11/26/2013	0.32	11/26/2013	0.21	11/26/2013	0.84	11/26/2013	0.38
11/27/2013	0	11/27/2013	0	11/27/2013	0	11/27/2013	0
11/28/2013	0	11/28/2013	0	11/28/2013	0	11/28/2013	0.01
11/29/2013	0	11/29/2013	0	11/29/2013	0	11/29/2013	0.01
11/30/2013	0	11/30/2013	0	11/30/2013	0	11/30/2013	0
12/1/2013	0	12/1/2013	0	12/1/2013	0	12/1/2013	0
12/2/2013	0	12/2/2013	0	12/2/2013	0	12/2/2013	0
12/3/2013	0	12/3/2013	0	12/3/2013	0	12/3/2013	0
12/4/2013	0	12/4/2013	0	12/4/2013	0	12/4/2013	0

12/5/2013	0	12/5/2013	0.03	12/5/2013	0	12/5/2013	0
12/6/2013	0	12/6/2013	0.02	12/6/2013	0	12/6/2013	0.04
12/7/2013	0	12/7/2013	0.02	12/7/2013	0	12/7/2013	0
12/8/2013	0	12/8/2013	0	12/8/2013	0	12/8/2013	0
12/9/2013	0.15	12/9/2013	0.03	12/9/2013	0.03	12/9/2013	0.04
12/10/2013	0	12/10/2013	0.04	12/10/2013	0	12/10/2013	0.05
12/11/2013	0	12/11/2013	0	12/11/2013	0	12/11/2013	0
12/12/2013	0	12/12/2013	0	12/12/2013	0	12/12/2013	0
12/13/2013	0	12/13/2013	0	12/13/2013	0	12/13/2013	0.07
12/14/2013	0.42	12/14/2013	0.06	12/14/2013	0.04	12/14/2013	0.16
12/15/2013	0	12/15/2013	0	12/15/2013	0	12/15/2013	0.01
12/16/2013	0	12/16/2013	0	12/16/2013	0	12/16/2013	0
12/17/2013	0	12/17/2013	0	12/17/2013	0	12/17/2013	0
12/18/2013	0	12/18/2013	0	12/18/2013	0	12/18/2013	0
12/19/2013	0	12/19/2013	0	12/19/2013	0	12/19/2013	0
12/20/2013	0	12/20/2013	0	12/20/2013	0	12/20/2013	0
12/21/2013	0.32	12/21/2013	0.09	12/21/2013	0.08	12/21/2013	0.18
12/22/2013	0.88	12/22/2013	0.49	12/22/2013	0.25	12/22/2013	0.2
12/23/2013	0	12/23/2013	0	12/23/2013	0	12/23/2013	0
12/24/2013	0	12/24/2013	0	12/24/2013	0	12/24/2013	0
12/25/2013	0	12/25/2013	0	12/25/2013	0	12/25/2013	0
12/26/2013	0	12/26/2013	0	12/26/2013	0	12/26/2013	0.02
12/27/2013	0	12/27/2013	0.11	12/27/2013	0.2	12/27/2013	0.01
12/28/2013	0	12/28/2013	0.09	12/28/2013	0	12/28/2013	0
12/29/2013	0	12/29/2013	0.02	12/29/2013	0.01	12/29/2013	0
12/30/2013	0	12/30/2013	0	12/30/2013	0	12/30/2013	0
12/31/2013	0	12/31/2013	0	12/31/2013	0	12/31/2013	0
1/1/2014	0	1/1/2014	0	1/1/2014	0	1/1/2014	0
1/2/2014	0	1/2/2014	0	1/2/2014	0	1/2/2014	0
1/3/2014	0	1/3/2014	0	1/3/2014	0	1/3/2014	0
1/4/2014	0	1/4/2014	0	1/4/2014	0	1/4/2014	0
1/5/2014	0	1/5/2014	0	1/5/2014	0	1/5/2014	0
1/6/2014	0	1/6/2014	0	1/6/2014	0	1/6/2014	0
1/7/2014	0	1/7/2014	0	1/7/2014	0	1/7/2014	0
1/8/2014	0	1/8/2014	0.08	1/8/2014	0	1/8/2014	0.04
1/9/2014	0.12	1/9/2014	0.06	1/9/2014	0.09	1/9/2014	0.02
1/10/2014	0.04	1/10/2014	0.01	1/10/2014	0	1/10/2014	0
1/11/2014	0.01	1/11/2014	0.06	1/11/2014	0	1/11/2014	0.02

1/12/2014	0	1/12/2014	0	1/12/2014	0	1/12/2014	0
1/13/2014	0.01	1/13/2014	0	1/13/2014	0	1/13/2014	0
1/14/2014	0	1/14/2014	0	1/14/2014	0	1/14/2014	0
1/15/2014	0	1/15/2014	0	1/15/2014	0	1/15/2014	0
1/16/2014	0	1/16/2014	0	1/16/2014	0	1/16/2014	0
1/17/2014	0	1/17/2014	0	1/17/2014	0	1/17/2014	0
1/18/2014	0	1/18/2014	0	1/18/2014	0	1/18/2014	0
1/19/2014	0	1/19/2014	0	1/19/2014	0	1/19/2014	0
1/20/2014	0	1/20/2014	0	1/20/2014	0	1/20/2014	0
1/21/2014	0	1/21/2014	0	1/21/2014	0	1/21/2014	0
1/22/2014	0	1/22/2014	0	1/22/2014	0	1/22/2014	0
1/23/2014	0	1/23/2014	0	1/23/2014	0	1/23/2014	0
1/24/2014	0.11	1/24/2014	0.13	1/24/2014	0.04	1/24/2014	0.15
1/25/2014	0	1/25/2014	0	1/25/2014	0	1/25/2014	0
1/26/2014	0	1/26/2014	0	1/26/2014	0	1/26/2014	0
1/27/2014	0	1/27/2014	0	1/27/2014	0	1/27/2014	0
1/28/2014	0	1/28/2014	0	1/28/2014	0	1/28/2014	0.01
1/29/2014	0	1/29/2014	0	1/29/2014	0	1/29/2014	0
1/30/2014	0	1/30/2014	0	1/30/2014	0	1/30/2014	0
1/31/2014	0	1/31/2014	0	1/31/2014	0	1/31/2014	0
2/1/2014	0	2/1/2014	0	2/1/2014	0	2/1/2014	0
2/2/2014	0	2/2/2014	0.01	2/2/2014	0.01	2/2/2014	0.02
2/3/2014	0	2/3/2014	0	2/3/2014	0	2/3/2014	0
2/4/2014	0.18	2/4/2014	0.16	2/4/2014	0.12	2/4/2014	0.11
2/5/2014	0	2/5/2014	0	2/5/2014	0	2/5/2014	0
2/6/2014	0	2/6/2014	0.04	2/6/2014	0	2/6/2014	0
2/7/2014	0	2/7/2014	0	2/7/2014	0	2/7/2014	0
2/8/2014	0	2/8/2014	0	2/8/2014	0	2/8/2014	0
2/9/2014	0	2/9/2014	0	2/9/2014	0	2/9/2014	0
2/10/2014	0	2/10/2014	0.02	2/10/2014	0	2/10/2014	0
2/11/2014	0	2/11/2014	0	2/11/2014	0	2/11/2014	0
2/12/2014	0	2/12/2014	0.03	2/12/2014	0.03	2/12/2014	0.07
2/13/2014	0	2/13/2014	0	2/13/2014	0	2/13/2014	0
2/14/2014	0	2/14/2014	0	2/14/2014	0	2/14/2014	0
2/15/2014	0	2/15/2014	0	2/15/2014	0	2/15/2014	0
2/16/2014	0	2/16/2014	0.01	2/16/2014	0	2/16/2014	0
2/17/2014	0	2/17/2014	0	2/17/2014	0	2/17/2014	0
2/18/2014	0	2/18/2014	0	2/18/2014	0	2/18/2014	0

2/19/2014	0	2/19/2014	0	2/19/2014	0	2/19/2014	0
2/20/2014	0	2/20/2014	0	2/20/2014	0	2/20/2014	0
2/21/2014	0	2/21/2014	0	2/21/2014	0	2/21/2014	0
2/22/2014	0	2/22/2014	0	2/22/2014	0	2/22/2014	0
2/23/2014	0	2/23/2014	0	2/23/2014	0	2/23/2014	0
2/24/2014	0	2/24/2014	0	2/24/2014	0	2/24/2014	0
2/25/2014	0.04	2/25/2014	0	2/25/2014	0	2/25/2014	0
2/26/2014	0.04	2/26/2014	0.02	2/26/2014	0.03	2/26/2014	0.25
2/27/2014	0	2/27/2014	0.11	2/27/2014	0	2/27/2014	0.06
2/28/2014	0	2/28/2014	0	2/28/2014	0	2/28/2014	0
3/1/2014	0	3/1/2014	0	3/1/2014	0	3/1/2014	0
3/2/2014	0	3/2/2014	0	3/2/2014	0.2	3/2/2014	0
3/3/2014	0	3/3/2014	0.13	3/3/2014	0.2	3/3/2014	0.15
3/4/2014	0.2	3/4/2014	0.11	3/4/2014	0.34	3/4/2014	0.25
3/5/2014	0	3/5/2014	0.03	3/5/2014	0	3/5/2014	0
3/6/2014	0	3/6/2014	0	3/6/2014	0	3/6/2014	0
3/7/2014	0	3/7/2014	0	3/7/2014	0	3/7/2014	0
3/8/2014	0	3/8/2014	0	3/8/2014	0	3/8/2014	0.03
3/9/2014	0.48	3/9/2014	0.53	3/9/2014	0.06	3/9/2014	0.44
3/10/2014	0	3/10/2014	0.02	3/10/2014	0.05	3/10/2014	0.01
3/11/2014	0	3/11/2014	0.14	3/11/2014	0.07	3/11/2014	0.01
3/12/2014	0	3/12/2014	0	3/12/2014	0.01	3/12/2014	0
3/13/2014	0	3/13/2014	0	3/13/2014	0	3/13/2014	0
3/14/2014	0	3/14/2014	0	3/14/2014	0	3/14/2014	0
3/15/2014	0	3/15/2014	0.01	3/15/2014	0	3/15/2014	0.01
3/16/2014	0.11	3/16/2014	0.02	3/16/2014	0.04	3/16/2014	0.04
3/17/2014	0	3/17/2014	0	3/17/2014	0	3/17/2014	0
3/18/2014	0	3/18/2014	0	3/18/2014	0	3/18/2014	0
3/19/2014	0	3/19/2014	0	3/19/2014	0	3/19/2014	0
3/20/2014	0	3/20/2014	0	3/20/2014	0	3/20/2014	0
3/21/2014	0	3/21/2014	0	3/21/2014	0	3/21/2014	0
3/22/2014	0	3/22/2014	0	3/22/2014	0	3/22/2014	0
3/23/2014	0	3/23/2014	0	3/23/2014	0.02	3/23/2014	0
3/24/2014	0	3/24/2014	0	3/24/2014	0	3/24/2014	0
3/25/2014	0	3/25/2014	0.04	3/25/2014	0	3/25/2014	0
3/26/2014	0.03	3/26/2014	0	3/26/2014	0.03	3/26/2014	0
3/27/2014	0.02	3/27/2014	0.05	3/27/2014	0.13	3/27/2014	0
3/28/2014	0.03	3/28/2014	0.03	3/28/2014	0.02	3/28/2014	0

3/29/2014	0	3/29/2014	0	3/29/2014	0	3/29/2014	0
3/30/2014	0	3/30/2014	0	3/30/2014	0	3/30/2014	0
3/31/2014	0	3/31/2014	0	3/31/2014	0	3/31/2014	0
4/1/2014	0	4/1/2014	0	4/1/2014	0	4/1/2014	0
4/2/2014	0	4/2/2014	0	4/2/2014	0	4/2/2014	0
4/3/2014	0	4/3/2014	0	4/3/2014	0	4/3/2014	0
4/4/2014	0	4/4/2014	0	4/4/2014	0	4/4/2014	0
4/5/2014	0	4/5/2014	0	4/5/2014	0	4/5/2014	0
4/6/2014	0.13	4/6/2014	0	4/6/2014	0.02	4/6/2014	0.03
4/7/2014	0.99	4/7/2014	0.06	4/7/2014	0.35	4/7/2014	0.38
4/8/2014	0.07	4/8/2014	0.04	4/8/2014	0.02	4/8/2014	0.13
4/9/2014	0	4/9/2014	0	4/9/2014	0	4/9/2014	0
4/10/2014	0	4/10/2014	0	4/10/2014	0	4/10/2014	0
4/11/2014	0	4/11/2014	0	4/11/2014	0	4/11/2014	0
4/12/2014	0	4/12/2014	0	4/12/2014	0	4/12/2014	0
4/13/2014	0	4/13/2014	0	4/13/2014	0	4/13/2014	0
4/14/2014	0.21	4/14/2014	0	4/14/2014	0	4/14/2014	0.05
4/15/2014	0	4/15/2014	0.34	4/15/2014	0.03	4/15/2014	0.3
4/16/2014	0	4/16/2014	0	4/16/2014	0	4/16/2014	0
4/17/2014	0	4/17/2014	0	4/17/2014	0	4/17/2014	0.02
4/18/2014	0.13	4/18/2014	0.24	4/18/2014	0	4/18/2014	0
4/19/2014	0	4/19/2014	0	4/19/2014	0	4/19/2014	0
4/20/2014	0	4/20/2014	0	4/20/2014	0.01	4/20/2014	0
4/21/2014	0	4/21/2014	0	4/21/2014	0.01	4/21/2014	0.03
4/22/2014	0	4/22/2014	0	4/22/2014	0	4/22/2014	0
4/23/2014	0	4/23/2014	0	4/23/2014	0	4/23/2014	0
4/24/2014	0	4/24/2014	0	4/24/2014	0	4/24/2014	0
4/25/2014	0	4/25/2014	0	4/25/2014	0	4/25/2014	0
4/26/2014	0	4/26/2014	0	4/26/2014	0	4/26/2014	0
4/27/2014	0	4/27/2014	0	4/27/2014	0	4/27/2014	0
4/28/2014	0	4/28/2014	0	4/28/2014	0	4/28/2014	0
4/29/2014	0	4/29/2014	0	4/29/2014	0	4/29/2014	0
4/30/2014	0	4/30/2014	0	4/30/2014	0	4/30/2014	0
5/1/2014	0	5/1/2014	0	5/1/2014	0	5/1/2014	0
5/2/2014	0	5/2/2014	0	5/2/2014	0	5/2/2014	0
5/3/2014	0	5/3/2014	0	5/3/2014	0	5/3/2014	0
5/4/2014	0	5/4/2014	0	5/4/2014	0	5/4/2014	0
5/5/2014	0	5/5/2014	0	5/5/2014	0	5/5/2014	0

5/6/2014	0	5/6/2014	0	5/6/2014	0	5/6/2014	0
5/7/2014	0	5/7/2014	0	5/7/2014	0	5/7/2014	0
5/8/2014	0	5/8/2014	0	5/8/2014	0	5/8/2014	0.35
5/9/2014	0.13	5/9/2014	0.16	5/9/2014	0	5/9/2014	0.7
5/10/2014	0	5/10/2014	0.26	5/10/2014	1.06	5/10/2014	0
5/11/2014	0	5/11/2014	0	5/11/2014	0	5/11/2014	0
5/12/2014	0	5/12/2014	0	5/12/2014	0	5/12/2014	0.7
5/13/2014	3.35	5/13/2014	2.72	5/13/2014	2.86	5/13/2014	2.25
5/14/2014	0.28	5/14/2014	0.17	5/14/2014	0.38	5/14/2014	0.03
5/15/2014	0	5/15/2014	0	5/15/2014	0	5/15/2014	0
5/16/2014	0	5/16/2014	0	5/16/2014	0	5/16/2014	0
5/17/2014	0	5/17/2014	0	5/17/2014	0	5/17/2014	0
5/18/2014	0	5/18/2014	0	5/18/2014	0	5/18/2014	0
5/19/2014	0	5/19/2014	0	5/19/2014	0	5/19/2014	0
5/20/2014	0	5/20/2014	0	5/20/2014	0	5/20/2014	0
5/21/2014	0	5/21/2014	0	5/21/2014	0	5/21/2014	0
5/22/2014	0	5/22/2014	0	5/22/2014	0	5/22/2014	0
5/23/2014	0	5/23/2014	0	5/23/2014	0.03	5/23/2014	0
5/24/2014	0	5/24/2014	0.07	5/24/2014	0.01	5/24/2014	0.05
5/25/2014	0.26	5/25/2014	0.18	5/25/2014	0.2	5/25/2014	0.2
5/26/2014	0.07	5/26/2014	0.27	5/26/2014	1.9	5/26/2014	1.62
5/27/2014	2.61	5/27/2014	2.17	5/27/2014	0.69	5/27/2014	0.99
5/28/2014	0.58	5/28/2014	0.09	5/28/2014	0	5/28/2014	0
5/29/2014	0	5/29/2014	0	5/29/2014	0	5/29/2014	0
5/30/2014	0	5/30/2014	0	5/30/2014	0	5/30/2014	0
5/31/2014	0	5/31/2014	0	5/31/2014	0	5/31/2014	0
6/1/2014	0	6/1/2014	0	6/1/2014	0	6/1/2014	0
6/2/2014	0	6/2/2014	0	6/2/2014	0	6/2/2014	0
6/3/2014	0	6/3/2014	0	6/3/2014	0	6/3/2014	0
6/4/2014	0	6/4/2014	0	6/4/2014	0	6/4/2014	0
6/5/2014	0	6/5/2014	0	6/5/2014	0	6/5/2014	0
6/6/2014	0	6/6/2014	0	6/6/2014	0	6/6/2014	0
6/7/2014	0	6/7/2014	0	6/7/2014	0	6/7/2014	0
6/8/2014	0	6/8/2014	0	6/8/2014	0	6/8/2014	0.12
6/9/2014	0.05	6/9/2014	0.44	6/9/2014	0.26	6/9/2014	0.4
6/10/2014	1.02	6/10/2014	0.19	6/10/2014	1.36	6/10/2014	0
6/11/2014	0	6/11/2014	0	6/11/2014	0	6/11/2014	0
6/12/2014	0	6/12/2014	0	6/12/2014	0	6/12/2014	1.42

6/13/2014	0.16	6/13/2014	0.09	6/13/2014	0.01	6/13/2014	0
6/14/2014	0	6/14/2014	0	6/14/2014	0	6/14/2014	0
6/15/2014	0	6/15/2014	0	6/15/2014	0	6/15/2014	0
6/16/2014	0	6/16/2014	0	6/16/2014	0	6/16/2014	0
6/17/2014	0	6/17/2014	0	6/17/2014	0	6/17/2014	0.03
6/18/2014	0	6/18/2014	0	6/18/2014	0	6/18/2014	0
6/19/2014	0	6/19/2014	0	6/19/2014	0.11	6/19/2014	0
6/20/2014	0	6/20/2014	0	6/20/2014	0	6/20/2014	0
6/21/2014	0	6/21/2014	0	6/21/2014	0	6/21/2014	0
6/22/2014	0.01	6/22/2014	0.08	6/22/2014	0.24	6/22/2014	0
6/23/2014	0	6/23/2014	0	6/23/2014	0	6/23/2014	0.7
6/24/2014	0.6	6/24/2014	0.21	6/24/2014	0	6/24/2014	0.2
6/25/2014	0	6/25/2014	0	6/25/2014	0.56	6/25/2014	0
6/26/2014	0.97	6/26/2014	0	6/26/2014	0	6/26/2014	0
6/27/2014	0	6/27/2014	0.13	6/27/2014	0	6/27/2014	0
6/28/2014	0	6/28/2014	0.13	6/28/2014	0	6/28/2014	0
6/29/2014	0	6/29/2014	0	6/29/2014	0	6/29/2014	0
6/30/2014	0	6/30/2014	0	6/30/2014	0	6/30/2014	0
7/1/2014	0	7/1/2014	0	7/1/2014	0	7/1/2014	0
7/2/2014	0	7/2/2014	0	7/2/2014	0	7/2/2014	0
7/3/2014	0	7/3/2014	0	7/3/2014	0	7/3/2014	0
7/4/2014	0	7/4/2014	0	7/4/2014	0	7/4/2014	0
7/5/2014	0	7/5/2014	0	7/5/2014	0.01	7/5/2014	0
7/6/2014	0	7/6/2014	0	7/6/2014	0	7/6/2014	0
7/7/2014	0	7/7/2014	0	7/7/2014	0	7/7/2014	0
7/8/2014	0	7/8/2014	0	7/8/2014	0	7/8/2014	0
7/9/2014	0	7/9/2014	0	7/9/2014	0	7/9/2014	0
7/10/2014	0	7/10/2014	0	7/10/2014	0	7/10/2014	0
7/11/2014	0	7/11/2014	0	7/11/2014	0	7/11/2014	0
7/12/2014	0	7/12/2014	0	7/12/2014	0	7/12/2014	0
7/13/2014	0	7/13/2014	0	7/13/2014	0	7/13/2014	0
7/14/2014	0	7/14/2014	0	7/14/2014	0	7/14/2014	0
7/15/2014	0.12	7/15/2014	0	7/15/2014	0	7/15/2014	0.29
7/16/2014	0.25	7/16/2014	0.04	7/16/2014	0	7/16/2014	0.01
7/17/2014	0	7/17/2014	0	7/17/2014	0.32	7/17/2014	0.26
7/18/2014	2.44	7/18/2014	0.51	7/18/2014	2.4	7/18/2014	0.19
7/19/2014	0	7/19/2014	0.02	7/19/2014	0	7/19/2014	0
7/20/2014	0	7/20/2014	0	7/20/2014	0	7/20/2014	0

7/21/2014	0	7/21/2014	0	7/21/2014	0	7/21/2014	0
7/22/2014	0	7/22/2014	0	7/22/2014	0	7/22/2014	0
7/23/2014	0	7/23/2014	0	7/23/2014	0	7/23/2014	0
7/24/2014	0	7/24/2014	0	7/24/2014	0	7/24/2014	0.02
7/25/2014	0.33	7/25/2014	0.02	7/25/2014	0	7/25/2014	0
7/26/2014	0	7/26/2014	0	7/26/2014	0	7/26/2014	0
7/27/2014	0	7/27/2014	0	7/27/2014	0	7/27/2014	0
7/28/2014	0	7/28/2014	0	7/28/2014	0	7/28/2014	0
7/29/2014	0	7/29/2014	0	7/29/2014	0	7/29/2014	0.22
7/30/2014	0	7/30/2014	0	7/30/2014	0	7/30/2014	0
7/31/2014	0	7/31/2014	0	7/31/2014	0	7/31/2014	0
8/1/2014	0	8/1/2014	0	8/1/2014	0.35	8/1/2014	0
8/2/2014	0	8/2/2014	0	8/2/2014	0	8/2/2014	0
8/3/2014	0	8/3/2014	0	8/3/2014	0	8/3/2014	0
8/4/2014	0	8/4/2014	0	8/4/2014	0	8/4/2014	0
8/5/2014	0	8/5/2014	0	8/5/2014	0	8/5/2014	0
8/6/2014	0	8/6/2014	0	8/6/2014	0	8/6/2014	0
8/7/2014	0	8/7/2014	0	8/7/2014	0	8/7/2014	0
8/8/2014	0	8/8/2014	0	8/8/2014	0	8/8/2014	0
8/9/2014	0	8/9/2014	0	8/9/2014	0	8/9/2014	0
8/10/2014	0	8/10/2014	0	8/10/2014	0	8/10/2014	0
8/11/2014	0	8/11/2014	0	8/11/2014	0	8/11/2014	0.04
8/12/2014	0.1	8/12/2014	0	8/12/2014	0	8/12/2014	0
8/13/2014	0	8/13/2014	0	8/13/2014	0	8/13/2014	0
8/14/2014	0	8/14/2014	0	8/14/2014	0	8/14/2014	0
8/15/2014	0	8/15/2014	0	8/15/2014	0	8/15/2014	0
8/16/2014	0	8/16/2014	0	8/16/2014	0	8/16/2014	0
8/17/2014	0	8/17/2014	0	8/17/2014	0	8/17/2014	0
8/18/2014	0	8/18/2014	0	8/18/2014	0	8/18/2014	0.03
8/19/2014	0	8/19/2014	0	8/19/2014	0.4	8/19/2014	0.27
8/20/2014	0	8/20/2014	0	8/20/2014	0.25	8/20/2014	0
8/21/2014	0	8/21/2014	0	8/21/2014	0	8/21/2014	0
8/22/2014	0	8/22/2014	0	8/22/2014	0	8/22/2014	0
8/23/2014	0	8/23/2014	0	8/23/2014	0	8/23/2014	0
8/24/2014	0	8/24/2014	0	8/24/2014	0	8/24/2014	0
8/25/2014	0	8/25/2014	0	8/25/2014	0	8/25/2014	0
8/26/2014	0	8/26/2014	0	8/26/2014	0	8/26/2014	0.61
8/27/2014	0	8/27/2014	0	8/27/2014	0	8/27/2014	0

8/28/2014	0	8/28/2014	0	8/28/2014	0	8/28/2014	0
8/29/2014	0	8/29/2014	0	8/29/2014	0	8/29/2014	0.02
8/30/2014	0	8/30/2014	0	8/30/2014	0	8/30/2014	0.02
8/31/2014	0	8/31/2014	0	8/31/2014	0	8/31/2014	0
9/1/2014	0	9/1/2014	0	9/1/2014	0	9/1/2014	0
9/2/2014	0	9/2/2014	0	9/2/2014	0	9/2/2014	0
9/3/2014	0	9/3/2014	0	9/3/2014	0	9/3/2014	0
9/4/2014	0	9/4/2014	0	9/4/2014	0.1	9/4/2014	0
9/5/2014	0	9/5/2014	0.03	9/5/2014	0.12	9/5/2014	0.03
9/6/2014	0	9/6/2014	0	9/6/2014	0	9/6/2014	0
9/7/2014	0.13	9/7/2014	0.12	9/7/2014	0.12	9/7/2014	0.01
9/8/2014	0	9/8/2014	0	9/8/2014	0	9/8/2014	0
9/9/2014	0	9/9/2014	0	9/9/2014	0	9/9/2014	0
9/10/2014	0	9/10/2014	0	9/10/2014	0	9/10/2014	0
9/11/2014	0	9/11/2014	0	9/11/2014	0	9/11/2014	0
9/12/2014	0	9/12/2014	0	9/12/2014	0	9/12/2014	0.04
9/13/2014	0.18	9/13/2014	0.4	9/13/2014	1.15	9/13/2014	0.04
9/14/2014	0.03	9/14/2014	0.03	9/14/2014	0.23	9/14/2014	0
9/15/2014	0	9/15/2014	0	9/15/2014	0	9/15/2014	0
9/16/2014	0	9/16/2014	0	9/16/2014	0	9/16/2014	0.28
9/17/2014	0	9/17/2014	0.02	9/17/2014	0.02	9/17/2014	0
9/18/2014	2.34	9/18/2014	2.04	9/18/2014	0.18	9/18/2014	1.65
9/19/2014	0.43	9/19/2014	0.34	9/19/2014	0.01	9/19/2014	0.07
9/20/2014	0	9/20/2014	0	9/20/2014	1.02	9/20/2014	0
9/21/2014	0	9/21/2014	0.39	9/21/2014	0	9/21/2014	0
9/22/2014	0	9/22/2014	0	9/22/2014	0	9/22/2014	0.05
9/23/2014	0	9/23/2014	0	9/23/2014	0	9/23/2014	0
9/24/2014	0	9/24/2014	0	9/24/2014	0	9/24/2014	0
9/25/2014	0	9/25/2014	0	9/25/2014	0	9/25/2014	0
9/26/2014	0	9/26/2014	0	9/26/2014	0	9/26/2014	0
9/27/2014	0	9/27/2014	0.49	9/27/2014	1.45	9/27/2014	0
9/28/2014	0	9/28/2014	0.14	9/28/2014	0.25	9/28/2014	0
9/29/2014	0	9/29/2014	0	9/29/2014	0	9/29/2014	0
9/30/2014	0	9/30/2014	0	9/30/2014	0	9/30/2014	0
10/1/2014	0	10/1/2014	0	10/1/2014	0	10/1/2014	0
10/2/2014	0	10/2/2014	0	10/2/2014	0	10/2/2014	0
10/3/2014	0.38	10/3/2014	0	10/3/2014	0.01	10/3/2014	0
10/4/2014	0	10/4/2014	0	10/4/2014	0	10/4/2014	0

10/5/2014	0	10/5/2014	0	10/5/2014	0	10/5/2014	0
10/6/2014	0	10/6/2014	0	10/6/2014	0	10/6/2014	0
10/7/2014	0	10/7/2014	0	10/7/2014	0	10/7/2014	0
10/8/2014	0	10/8/2014	0	10/8/2014	0	10/8/2014	0
10/9/2014	0	10/9/2014	0	10/9/2014	0.04	10/9/2014	0
10/10/2014	0	10/10/2014	0	10/10/2014	0	10/10/2014	0
10/11/2014	0.97	10/11/2014	0.02	10/11/2014	0.75	10/11/2014	1.45
10/12/2014	2.3	10/12/2014	0.31	10/12/2014	0.62	10/12/2014	0.02
10/13/2014	0.5	10/13/2014	0.01	10/13/2014	0.1	10/13/2014	0.17
10/14/2014	0	10/14/2014	0.01	10/14/2014	0	10/14/2014	0
10/15/2014	0	10/15/2014	0	10/15/2014	0	10/15/2014	0
10/16/2014	0	10/16/2014	0	10/16/2014	0	10/16/2014	0
10/17/2014	0	10/17/2014	0	10/17/2014	0	10/17/2014	0
10/18/2014	0	10/18/2014	0	10/18/2014	0	10/18/2014	0
10/19/2014	0	10/19/2014	0	10/19/2014	0	10/19/2014	0
10/20/2014	0	10/20/2014	0	10/20/2014	0	10/20/2014	0
10/21/2014	0	10/21/2014	0	10/21/2014	0	10/21/2014	0
10/22/2014	0	10/22/2014	0	10/22/2014	0	10/22/2014	0
10/23/2014	0.03	10/23/2014	0.09	10/23/2014	0.2	10/23/2014	0.03
10/24/2014	0	10/24/2014	0	10/24/2014	0	10/24/2014	0
10/25/2014	0	10/25/2014	0	10/25/2014	0	10/25/2014	0
10/26/2014	0	10/26/2014	0	10/26/2014	0	10/26/2014	0
10/27/2014	0	10/27/2014	0	10/27/2014	0	10/27/2014	0
10/28/2014	0	10/28/2014	0	10/28/2014	0	10/28/2014	0
10/29/2014	0	10/29/2014	0	10/29/2014	0	10/29/2014	0
10/30/2014	0	10/30/2014	0	10/30/2014	0	10/30/2014	0.04
10/31/2014	0.01	10/31/2014	0.09	10/31/2014	1.7	10/31/2014	0
11/1/2014	0	11/1/2014	0	11/1/2014	0	11/1/2014	0
11/2/2014	0	11/2/2014	0	11/2/2014	0	11/2/2014	0
11/3/2014	0	11/3/2014	0	11/3/2014	0	11/3/2014	0
11/4/2014	0	11/4/2014	0	11/4/2014	0.01	11/4/2014	0.6
11/5/2014	1.73	11/5/2014	1.77	11/5/2014	2.2	11/5/2014	1.5
11/6/2014	0.25	11/6/2014	1.89	11/6/2014	1.51	11/6/2014	0.05
11/7/2014	0	11/7/2014	0.03	11/7/2014	0.01	11/7/2014	0
11/8/2014	0	11/8/2014	0	11/8/2014	0	11/8/2014	0
11/9/2014	0	11/9/2014	0	11/9/2014	0	11/9/2014	0
11/10/2014	0	11/10/2014	0	11/10/2014	0	11/10/2014	0
11/11/2014	0	11/11/2014	0	11/11/2014	0	11/11/2014	0

11/12/2014	0	11/12/2014	0	11/12/2014	0	11/12/2014	0
11/13/2014	0	11/13/2014	0	11/13/2014	0	11/13/2014	0
11/14/2014	0	11/14/2014	0	11/14/2014	0	11/14/2014	0
11/15/2014	0	11/15/2014	0	11/15/2014	0	11/15/2014	0
11/16/2014	0.02	11/16/2014	0.06	11/16/2014	0.06	11/16/2014	0
11/17/2014	0	11/17/2014	0.03	11/17/2014	0	11/17/2014	0
11/18/2014	0	11/18/2014	0	11/18/2014	0	11/18/2014	0
11/19/2014	0	11/19/2014	0	11/19/2014	0	11/19/2014	0
11/20/2014	0	11/20/2014	0	11/20/2014	0	11/20/2014	0
11/21/2014	0.04	11/21/2014	0.02	11/21/2014	0.01	11/21/2014	0.39
11/22/2014	0.45	11/22/2014	0.36	11/22/2014	0.16	11/22/2014	2.1
11/23/2014	1.07	11/23/2014	2.79	11/23/2014	0.72	11/23/2014	0.01
11/24/2014	0	11/24/2014	0	11/24/2014	0	11/24/2014	0
11/25/2014	0	11/25/2014	0	11/25/2014	0	11/25/2014	0
11/26/2014	0	11/26/2014	0	11/26/2014	0	11/26/2014	0
11/27/2014	0	11/27/2014	0	11/27/2014	0	11/27/2014	0
11/28/2014	0	11/28/2014	0	11/28/2014	0	11/28/2014	0
11/29/2014	0	11/29/2014	0	11/29/2014	0	11/29/2014	0
11/30/2014	0	11/30/2014	0	11/30/2014	0	11/30/2014	0
12/1/2014	0	12/1/2014	0.02	12/1/2014	0	12/1/2014	0
12/2/2014	0	12/2/2014	0	12/2/2014	0	12/2/2014	0
12/3/2014	0	12/3/2014	0	12/3/2014	0	12/3/2014	0
12/4/2014	0	12/4/2014	0.04	12/4/2014	0.05	12/4/2014	0.04
12/5/2014	0	12/5/2014	0.02	12/5/2014	0.16	12/5/2014	0
12/6/2014	0.07	12/6/2014	0	12/6/2014	0.01	12/6/2014	0
12/7/2014	0	12/7/2014	0	12/7/2014	0	12/7/2014	0
12/8/2014	0	12/8/2014	0	12/8/2014	0	12/8/2014	0
12/9/2014	0	12/9/2014	0	12/9/2014	0	12/9/2014	0
12/10/2014	0	12/10/2014	0	12/10/2014	0	12/10/2014	0.01
12/11/2014	0.44	12/11/2014	0.04	12/11/2014	0.02	12/11/2014	0.02
12/12/2014	0	12/12/2014	0.11	12/12/2014	0.03	12/12/2014	0
12/13/2014	0	12/13/2014	0.01	12/13/2014	0	12/13/2014	0
12/14/2014	0	12/14/2014	0	12/14/2014	0	12/14/2014	0
12/15/2014	0.1	12/15/2014	0	12/15/2014	0	12/15/2014	0
12/16/2014	0	12/16/2014	0	12/16/2014	0	12/16/2014	0
12/17/2014	0	12/17/2014	0	12/17/2014	0	12/17/2014	0.01
12/18/2014	0.03	12/18/2014	0.01	12/18/2014	0.45	12/18/2014	0.01
12/19/2014	0.47	12/19/2014	0.66	12/19/2014	0.17	12/19/2014	0.03

12/20/2014	0.02	12/20/2014	0	12/20/2014	0	12/20/2014	0
12/21/2014	0	12/21/2014	0	12/21/2014	0	12/21/2014	0
12/22/2014	0	12/22/2014	0.02	12/22/2014	0	12/22/2014	0
12/23/2014	0	12/23/2014	0	12/23/2014	0	12/23/2014	0.09
12/24/2014	0	12/24/2014	0	12/24/2014	0.02	12/24/2014	0
12/25/2014	0	12/25/2014	0	12/25/2014	0	12/25/2014	0
12/26/2014	0	12/26/2014	0	12/26/2014	0	12/26/2014	0
12/27/2014	0.08	12/27/2014	0.02	12/27/2014	0.02	12/27/2014	0.04
12/28/2014	0	12/28/2014	0.22	12/28/2014	0.15	12/28/2014	0.01
12/29/2014	0.09	12/29/2014	0.11	12/29/2014	0.03	12/29/2014	0
12/30/2014	0	12/30/2014	0	12/30/2014	0	12/30/2014	0
12/31/2014	0	12/31/2014	0	12/31/2014	0.01	12/31/2014	0
1/1/2015	0.57	1/1/2015	0.09	1/1/2015	0.64	1/1/2015	0.47
1/2/2015	0.08	1/2/2015	0.12	1/2/2015	0.05	1/2/2015	0.12
1/3/2015	0.63	1/3/2015	0.51	1/3/2015	0.51	1/3/2015	0.62
1/4/2015	0	1/4/2015	0	1/4/2015	0	1/4/2015	0
1/5/2015	0	1/5/2015	0	1/5/2015	0	1/5/2015	0
1/6/2015	0	1/6/2015	0	1/6/2015	0	1/6/2015	0
1/7/2015	0	1/7/2015	0	1/7/2015	0	1/7/2015	0
1/8/2015	0	1/8/2015	0	1/8/2015	0	1/8/2015	0
1/9/2015	0	1/9/2015	0	1/9/2015	0	1/9/2015	0
1/10/2015	0.09	1/10/2015	0.08	1/10/2015	0.04	1/10/2015	0.03
1/11/2015	0	1/11/2015	0.44	1/11/2015	0.12	1/11/2015	0.35
1/12/2015	0	1/12/2015	0	1/12/2015	0	1/12/2015	0.01
1/13/2015	0	1/13/2015	0	1/13/2015	0	1/13/2015	0
1/14/2015	0	1/14/2015	0	1/14/2015	0	1/14/2015	0
1/15/2015	0	1/15/2015	0.04	1/15/2015	0.03	1/15/2015	0.05
1/16/2015	0	1/16/2015	0	1/16/2015	0	1/16/2015	0
1/17/2015	0	1/17/2015	0	1/17/2015	0	1/17/2015	0
1/18/2015	0	1/18/2015	0	1/18/2015	0	1/18/2015	0
1/19/2015	0	1/19/2015	0	1/19/2015	0	1/19/2015	0
1/20/2015	0	1/20/2015	0	1/20/2015	0	1/20/2015	0
1/21/2015	0	1/21/2015	0	1/21/2015	0	1/21/2015	0.08
1/22/2015	1.25	1/22/2015	1.92	1/22/2015	1.9	1/22/2015	1.95
1/23/2015	0.96	1/23/2015	0.41	1/23/2015	0.95	1/23/2015	0.45
1/24/2015	0.12	1/24/2015	0.07	1/24/2015	0.18	1/24/2015	0
1/25/2015	0	1/25/2015	0	1/25/2015	0	1/25/2015	0
1/26/2015	0	1/26/2015	0	1/26/2015	0	1/26/2015	0

1/27/2015	0	1/27/2015	0	1/27/2015	0	1/27/2015	0
1/28/2015	0	1/28/2015	0	1/28/2015	0	1/28/2015	0
1/29/2015	0	1/29/2015	0	1/29/2015	0	1/29/2015	0
1/30/2015	0	1/30/2015	0	1/30/2015	0	1/30/2015	0
1/31/2015	0	1/31/2015	0	1/31/2015	0	1/31/2015	0.16
2/1/2015	0.45	2/1/2015	0.23	2/1/2015	0.35	2/1/2015	0.04
2/2/2015	0	2/2/2015	0	2/2/2015	0	2/2/2015	0
2/3/2015	0	2/3/2015	0	2/3/2015	0	2/3/2015	0.02
2/4/2015	0	2/4/2015	0.34	2/4/2015	0.28	2/4/2015	0
2/5/2015	0	2/5/2015	0.01	2/5/2015	0	2/5/2015	0
2/6/2015	0	2/6/2015	0	2/6/2015	0	2/6/2015	0
2/7/2015	0	2/7/2015	0	2/7/2015	0	2/7/2015	0
2/8/2015	0	2/8/2015	0	2/8/2015	0	2/8/2015	0
2/9/2015	0	2/9/2015	0	2/9/2015	0	2/9/2015	0
2/10/2015	0	2/10/2015	0	2/10/2015	0	2/10/2015	0.03
2/11/2015	0	2/11/2015	0	2/11/2015	0	2/11/2015	0
2/12/2015	0	2/12/2015	0	2/12/2015	0	2/12/2015	0
2/13/2015	0	2/13/2015	0	2/13/2015	0	2/13/2015	0
2/14/2015	0	2/14/2015	0	2/14/2015	0	2/14/2015	0
2/15/2015	0	2/15/2015	0	2/15/2015	0	2/15/2015	0
2/16/2015	0	2/16/2015	0.08	2/16/2015	0.02	2/16/2015	0
2/17/2015	0.05	2/17/2015	0.03	2/17/2015	0.03	2/17/2015	0
2/18/2015	0	2/18/2015	0	2/18/2015	0	2/18/2015	0
2/19/2015	0	2/19/2015	0	2/19/2015	0	2/19/2015	0
2/20/2015	0	2/20/2015	0	2/20/2015	0	2/20/2015	0
2/21/2015	0	2/21/2015	0	2/21/2015	0	2/21/2015	0
2/22/2015	0	2/22/2015	0	2/22/2015	0	2/22/2015	0.03
2/23/2015	0.15	2/23/2015	0	2/23/2015	0	2/23/2015	0.01
2/24/2015	0	2/24/2015	0	2/24/2015	0.01	2/24/2015	0
2/25/2015	0	2/25/2015	0.02	2/25/2015	0	2/25/2015	0
2/26/2015	0	2/26/2015	0	2/26/2015	0	2/26/2015	0
2/27/2015	0.1	2/27/2015	0	2/27/2015	0	2/27/2015	0
2/28/2015	0.02	2/28/2015	0.05	2/28/2015	0.11	2/28/2015	0
3/1/2015	0.25	3/1/2015	0.24	3/1/2015	0.25	3/1/2015	0
3/2/2015	0.06	3/2/2015	0.06	3/2/2015	0.06	3/2/2015	0
3/3/2015	0.05	3/3/2015	0.05	3/3/2015	0.05	3/3/2015	0
3/4/2015	0	3/4/2015	0.07	3/4/2015	0.07	3/4/2015	0.3
3/5/2015	0.72	3/5/2015	0.26	3/5/2015	0.26	3/5/2015	0

3/6/2015	0	3/6/2015	0	3/6/2015	0	3/6/2015	0
3/7/2015	0	3/7/2015	0	3/7/2015	0	3/7/2015	0
3/8/2015	0.05	3/8/2015	0.49	3/8/2015	0.05	3/8/2015	0.05
3/9/2015	1.42	3/9/2015	0.48	3/9/2015	0.4	3/9/2015	0.64
3/10/2015	1	3/10/2015	0.94	3/10/2015	0.34	3/10/2015	0
3/11/2015	0	3/11/2015	0	3/11/2015	0	3/11/2015	0
3/12/2015	0	3/12/2015	0	3/12/2015	0	3/12/2015	0
3/13/2015	0	3/13/2015	0	3/13/2015	0	3/13/2015	0
3/14/2015	0	3/14/2015	0	3/14/2015	0	3/14/2015	0
3/15/2015	0	3/15/2015	0	3/15/2015	0	3/15/2015	0
3/16/2015	0	3/16/2015	0	3/16/2015	0	3/16/2015	0
3/17/2015	0	3/17/2015	0.03	3/17/2015	0.01	3/17/2015	0.01
3/18/2015	0.08	3/18/2015	0.21	3/18/2015	0.09	3/18/2015	0.01
3/19/2015	0.11	3/19/2015	0.02	3/19/2015	0	3/19/2015	0
3/20/2015	0	3/20/2015	0	3/20/2015	0	3/20/2015	0.33
3/21/2015	1.1	3/21/2015	1.28	3/21/2015	1.02	3/21/2015	0.67
3/22/2015	0.04	3/22/2015	0.09	3/22/2015	0.2	3/22/2015	0.03
3/23/2015	0	3/23/2015	0	3/23/2015	0	3/23/2015	0
3/24/2015	0	3/24/2015	0	3/24/2015	0	3/24/2015	0
3/25/2015	0	3/25/2015	0	3/25/2015	0	3/25/2015	0
3/26/2015	0	3/26/2015	0.04	3/26/2015	0	3/26/2015	0
3/27/2015	0	3/27/2015	0	3/27/2015	0	3/27/2015	0
3/28/2015	0	3/28/2015	0	3/28/2015	0	3/28/2015	0
3/29/2015	0	3/29/2015	0	3/29/2015	0	3/29/2015	0
3/30/2015	0	3/30/2015	0	3/30/2015	0	3/30/2015	0
3/31/2015	0	3/31/2015	0	3/31/2015	0	3/31/2015	0
4/1/2015	0	4/1/2015	0	4/1/2015	0	4/1/2015	0
4/2/2015	0	4/2/2015	0.04	4/2/2015	0	4/2/2015	0
4/3/2015	0	4/3/2015	0	4/3/2015	0	4/3/2015	0
4/4/2015	0.03	4/4/2015	0	4/4/2015	0	4/4/2015	0
4/5/2015	0	4/5/2015	0.03	4/5/2015	0.01	4/5/2015	0
4/6/2015	0.03	4/6/2015	0	4/6/2015	0.01	4/6/2015	0
4/7/2015	0	4/7/2015	0	4/7/2015	0	4/7/2015	0
4/8/2015	0	4/8/2015	0	4/8/2015	0	4/8/2015	0
4/9/2015	0	4/9/2015	0	4/9/2015	0.09	4/9/2015	0.33
4/10/2015	0	4/10/2015	0	4/10/2015	0.4	4/10/2015	0.14
4/11/2015	0	4/11/2015	0.84	4/11/2015	0.45	4/11/2015	0
4/12/2015	0.1	4/12/2015	0.01	4/12/2015	0.02	4/12/2015	0

4/13/2015	0.07	4/13/2015	0.49	4/13/2015	0.31	4/13/2015	0
4/14/2015	0	4/14/2015	0	4/14/2015	0	4/14/2015	0
4/15/2015	0	4/15/2015	0	4/15/2015	0	4/15/2015	0
4/16/2015	0	4/16/2015	0	4/16/2015	0	4/16/2015	0.01
4/17/2015	0	4/17/2015	0.63	4/17/2015	0.27	4/17/2015	0.27
4/18/2015	2.61	4/18/2015	0.56	4/18/2015	1.85	4/18/2015	0.27
4/19/2015	0.65	4/19/2015	0.01	4/19/2015	0.9	4/19/2015	0.28
4/20/2015	0	4/20/2015	0	4/20/2015	0	4/20/2015	0
4/21/2015	0	4/21/2015	0	4/21/2015	0	4/21/2015	0
4/22/2015	0	4/22/2015	0	4/22/2015	0	4/22/2015	0
4/23/2015	0	4/23/2015	0.16	4/23/2015	0.01	4/23/2015	0
4/24/2015	0.28	4/24/2015	0.56	4/24/2015	0.28	4/24/2015	0.31
4/25/2015	0	4/25/2015	1.13	4/25/2015	0.05	4/25/2015	0
4/26/2015	0	4/26/2015	0.03	4/26/2015	0	4/26/2015	0.03
4/27/2015	0.55	4/27/2015	0.37	4/27/2015	0.23	4/27/2015	0.21
4/28/2015	0	4/28/2015	0	4/28/2015	0	4/28/2015	0
4/29/2015	0	4/29/2015	0	4/29/2015	0	4/29/2015	0
4/30/2015	0	4/30/2015	0	4/30/2015	0	4/30/2015	0
5/1/2015	0	5/1/2015	0	5/1/2015	0	5/1/2015	0
5/2/2015	0	5/2/2015	0	5/2/2015	0	5/2/2015	0
5/3/2015	0	5/3/2015	0	5/3/2015	0	5/3/2015	0
5/4/2015	0	5/4/2015	0	5/4/2015	0.03	5/4/2015	0
5/5/2015	0	5/5/2015	0	5/5/2015	0.05	5/5/2015	0.01
5/6/2015	0.68	5/6/2015	0.04	5/6/2015	1.26	5/6/2015	0
5/7/2015	0.03	5/7/2015	0	5/7/2015	0	5/7/2015	0
5/8/2015	0	5/8/2015	0.01	5/8/2015	0	5/8/2015	0.04
5/9/2015	0.33	5/9/2015	0.16	5/9/2015	0.06	5/9/2015	0.01
5/10/2015	0.02	5/10/2015	0.02	5/10/2015	0.01	5/10/2015	0
5/11/2015	0.8	5/11/2015	0.08	5/11/2015	0	5/11/2015	1.2
5/12/2015	0.93	5/12/2015	0.02	5/12/2015	0.02	5/12/2015	0.02
5/13/2015	0.26	5/13/2015	1.07	5/13/2015	0.12	5/13/2015	1.11
5/14/2015	0.96	5/14/2015	0.02	5/14/2015	3.16	5/14/2015	0
5/15/2015	0.12	5/15/2015	0.71	5/15/2015	1.56	5/15/2015	0.42
5/16/2015	0.23	5/16/2015	0	5/16/2015	0.18	5/16/2015	0
5/17/2015	0.73	5/17/2015	0.06	5/17/2015	2.05	5/17/2015	0.98
5/18/2015	0	5/18/2015	1.93	5/18/2015	0.44	5/18/2015	0
5/19/2015	0.02	5/19/2015	0.06	5/19/2015	0	5/19/2015	0.02
5/20/2015	0.12	5/20/2015	0	5/20/2015	0	5/20/2015	0.01

5/21/2015	1.71	5/21/2015	0.08	5/21/2015	0.2	5/21/2015	0.35
5/22/2015	0	5/22/2015	0	5/22/2015	0.05	5/22/2015	0.03
5/23/2015	0.5	5/23/2015	0.04	5/23/2015	0.17	5/23/2015	2.07
5/24/2015	0.58	5/24/2015	2.13	5/24/2015	7.33	5/24/2015	0.31
5/25/2015	0	5/25/2015	0	5/25/2015	0.07	5/25/2015	2.19
5/26/2015	0	5/26/2015	0.53	5/26/2015	0	5/26/2015	0
5/27/2015	0	5/27/2015	0	5/27/2015	0.01	5/27/2015	0.02
5/28/2015	0.04	5/28/2015	0	5/28/2015	0.05	5/28/2015	0.63
5/29/2015	1.19	5/29/2015	1.02	5/29/2015	1.51	5/29/2015	0.39
5/30/2015	0	5/30/2015	0	5/30/2015	0.4	5/30/2015	0.01
5/31/2015	0	5/31/2015	1.04	5/31/2015	0.1	5/31/2015	0
6/1/2015	0	6/1/2015	0	6/1/2015	0	6/1/2015	0
6/2/2015	0	6/2/2015	0	6/2/2015	0	6/2/2015	0
6/3/2015	0	6/3/2015	0	6/3/2015	0	6/3/2015	0
6/4/2015	0	6/4/2015	0	6/4/2015	0	6/4/2015	0
6/5/2015	0	6/5/2015	0	6/5/2015	0	6/5/2015	0
6/6/2015	0	6/6/2015	0	6/6/2015	0	6/6/2015	0
6/7/2015	0	6/7/2015	0	6/7/2015	0	6/7/2015	0
6/8/2015	0	6/8/2015	0	6/8/2015	0	6/8/2015	0
6/9/2015	0	6/9/2015	0	6/9/2015	0	6/9/2015	0
6/10/2015	0	6/10/2015	0	6/10/2015	0	6/10/2015	0
6/11/2015	0	6/11/2015	0	6/11/2015	0	6/11/2015	0
6/12/2015	0	6/12/2015	0	6/12/2015	0	6/12/2015	0
6/13/2015	0	6/13/2015	0	6/13/2015	0	6/13/2015	0
6/14/2015	0.8	6/14/2015	1.68	6/14/2015	0.04	6/14/2015	0.01
6/15/2015	0	6/15/2015	0.76	6/15/2015	0.56	6/15/2015	0
6/16/2015	0.04	6/16/2015	0.06	6/16/2015	0.01	6/16/2015	0.24
6/17/2015	1.54	6/17/2015	0.22	6/17/2015	0.76	6/17/2015	0
6/18/2015	1.25	6/18/2015	3.01	6/18/2015	0	6/18/2015	0
6/19/2015	0	6/19/2015	0.52	6/19/2015	0.69	6/19/2015	0
6/20/2015	0	6/20/2015	0.06	6/20/2015	0.99	6/20/2015	0.14
6/21/2015	0.67	6/21/2015	0.52	6/21/2015	0.75	6/21/2015	0.15
6/22/2015	0	6/22/2015	0.21	6/22/2015	0.02	6/22/2015	0
6/23/2015	0	6/23/2015	0.02	6/23/2015	0.1	6/23/2015	0.07
6/24/2015	0	6/24/2015	0	6/24/2015	0	6/24/2015	0
6/25/2015	0	6/25/2015	0	6/25/2015	0	6/25/2015	0
6/26/2015	0	6/26/2015	0	6/26/2015	0	6/26/2015	0
6/27/2015	0	6/27/2015	0	6/27/2015	0	6/27/2015	0

6/28/2015	0	6/28/2015	0.16	6/28/2015	0	6/28/2015	0.18
6/29/2015	0	6/29/2015	0	6/29/2015	0.29	6/29/2015	0
6/30/2015	0.06	6/30/2015	0	6/30/2015	0	6/30/2015	0
7/1/2015	0.06	7/1/2015	1.72	7/1/2015	0.48	7/1/2015	0
7/2/2015	0.01	7/2/2015	0.02	7/2/2015	0.01	7/2/2015	0
7/3/2015	0.01	7/3/2015	0	7/3/2015	0	7/3/2015	0
7/4/2015	0	7/4/2015	0	7/4/2015	0	7/4/2015	0
7/5/2015	0	7/5/2015	0	7/5/2015	0	7/5/2015	0
7/6/2015	0	7/6/2015	0	7/6/2015	0	7/6/2015	0
7/7/2015	0	7/7/2015	0	7/7/2015	0	7/7/2015	0
7/8/2015	0	7/8/2015	0	7/8/2015	0.04	7/8/2015	0
7/9/2015	0	7/9/2015	0	7/9/2015	0	7/9/2015	0
7/10/2015	0	7/10/2015	0	7/10/2015	0	7/10/2015	0
7/11/2015	0	7/11/2015	0	7/11/2015	0	7/11/2015	0
7/12/2015	0	7/12/2015	0	7/12/2015	0	7/12/2015	0
7/13/2015	0	7/13/2015	0	7/13/2015	0	7/13/2015	0
7/14/2015	0	7/14/2015	0	7/14/2015	0	7/14/2015	0
7/15/2015	0	7/15/2015	0	7/15/2015	0	7/15/2015	0
7/16/2015	0	7/16/2015	0	7/16/2015	0	7/16/2015	0
7/17/2015	0	7/17/2015	0	7/17/2015	0	7/17/2015	0
7/18/2015	0	7/18/2015	0	7/18/2015	0	7/18/2015	0
7/19/2015	0	7/19/2015	0	7/19/2015	0	7/19/2015	0
7/20/2015	0	7/20/2015	0	7/20/2015	0	7/20/2015	0
7/21/2015	0	7/21/2015	0	7/21/2015	0	7/21/2015	0
7/22/2015	0	7/22/2015	0	7/22/2015	0	7/22/2015	0
7/23/2015	0	7/23/2015	0	7/23/2015	0	7/23/2015	0
7/24/2015	0	7/24/2015	0	7/24/2015	0	7/24/2015	0
7/25/2015	0	7/25/2015	0	7/25/2015	0	7/25/2015	0
7/26/2015	0	7/26/2015	0	7/26/2015	0	7/26/2015	0
7/27/2015	0	7/27/2015	0	7/27/2015	0	7/27/2015	0
7/28/2015	0	7/28/2015	0	7/28/2015	0	7/28/2015	0
7/29/2015	0	7/29/2015	0	7/29/2015	0	7/29/2015	0
7/30/2015	0	7/30/2015	0	7/30/2015	0	7/30/2015	0
7/31/2015	0	7/31/2015	0	7/31/2015	0	7/31/2015	0
8/1/2015	0	8/1/2015	0	8/1/2015	0	8/1/2015	0
8/2/2015	0	8/2/2015	0	8/2/2015	0	8/2/2015	0
8/3/2015	0	8/3/2015	0	8/3/2015	0	8/3/2015	0
8/4/2015	0	8/4/2015	0	8/4/2015	0	8/4/2015	0

8/5/2015	0	8/5/2015	0	8/5/2015	0	8/5/2015	0
8/6/2015	0	8/6/2015	0	8/6/2015	0	8/6/2015	0
8/7/2015	0	8/7/2015	0	8/7/2015	0	8/7/2015	0
8/8/2015	0	8/8/2015	0	8/8/2015	0	8/8/2015	0
8/9/2015	0	8/9/2015	0	8/9/2015	0	8/9/2015	0
8/10/2015	0	8/10/2015	0	8/10/2015	0	8/10/2015	0
8/11/2015	0	8/11/2015	0	8/11/2015	0	8/11/2015	0
8/12/2015	0	8/12/2015	0	8/12/2015	0	8/12/2015	0
8/13/2015	0	8/13/2015	0	8/13/2015	0.03	8/13/2015	0
8/14/2015	0	8/14/2015	0	8/14/2015	0	8/14/2015	0.1
8/15/2015	0	8/15/2015	0	8/15/2015	0.91	8/15/2015	0.03
8/16/2015	0	8/16/2015	0	8/16/2015	0.08	8/16/2015	0
8/17/2015	0	8/17/2015	0	8/17/2015	0	8/17/2015	0
8/18/2015	0	8/18/2015	0	8/18/2015	0	8/18/2015	0
8/19/2015	0	8/19/2015	0	8/19/2015	0	8/19/2015	0
8/20/2015	0	8/20/2015	0	8/20/2015	0	8/20/2015	0
8/21/2015	0.02	8/21/2015	0.24	8/21/2015	0	8/21/2015	0
8/22/2015	0	8/22/2015	0	8/22/2015	0	8/22/2015	0
8/23/2015	0	8/23/2015	0	8/23/2015	0	8/23/2015	0
8/24/2015	0	8/24/2015	0	8/24/2015	0	8/24/2015	0
8/25/2015	0	8/25/2015	0	8/25/2015	0	8/25/2015	0.01
8/26/2015	0	8/26/2015	0	8/26/2015	0.05	8/26/2015	0
8/27/2015	0	8/27/2015	0	8/27/2015	0	8/27/2015	0
8/28/2015	0	8/28/2015	0	8/28/2015	0	8/28/2015	0
8/29/2015	0	8/29/2015	0	8/29/2015	0	8/29/2015	0
8/30/2015	0	8/30/2015	0	8/30/2015	0	8/30/2015	0.36
8/31/2015	0.55	8/31/2015	0	8/31/2015	0	8/31/2015	0.01
9/1/2015	0	9/1/2015	0	9/1/2015	0	9/1/2015	0
9/2/2015	0	9/2/2015	0	9/2/2015	0	9/2/2015	0
9/3/2015	0	9/3/2015	0	9/3/2015	0	9/3/2015	0
9/4/2015	0	9/4/2015	0	9/4/2015	0	9/4/2015	0
9/5/2015	0	9/5/2015	0	9/5/2015	0	9/5/2015	0
9/6/2015	0	9/6/2015	0	9/6/2015	0	9/6/2015	0
9/7/2015	0	9/7/2015	0	9/7/2015	0	9/7/2015	0
9/8/2015	0	9/8/2015	0	9/8/2015	0	9/8/2015	0
9/9/2015	0	9/9/2015	0	9/9/2015	0	9/9/2015	0.51
9/10/2015	1.02	9/10/2015	0.07	9/10/2015	0	9/10/2015	0.17
9/11/2015	0	9/11/2015	0.23	9/11/2015	0	9/11/2015	0

9/12/2015	0	9/12/2015	0.02	9/12/2015	0.25	9/12/2015	0
9/13/2015	0	9/13/2015	0	9/13/2015	0	9/13/2015	0
9/14/2015	0	9/14/2015	0	9/14/2015	0	9/14/2015	0
9/15/2015	0	9/15/2015	0	9/15/2015	0	9/15/2015	0
9/16/2015	0	9/16/2015	0	9/16/2015	0.02	9/16/2015	0.05
9/17/2015	0	9/17/2015	0.07	9/17/2015	0.05	9/17/2015	0
9/18/2015	0	9/18/2015	0	9/18/2015	0	9/18/2015	0
9/19/2015	0	9/19/2015	0	9/19/2015	0	9/19/2015	0
9/20/2015	0	9/20/2015	0	9/20/2015	0	9/20/2015	0
9/21/2015	0	9/21/2015	0	9/21/2015	0	9/21/2015	0
9/22/2015	0	9/22/2015	0	9/22/2015	0	9/22/2015	0
9/23/2015	0	9/23/2015	0	9/23/2015	0	9/23/2015	0
9/24/2015	0	9/24/2015	0	9/24/2015	0	9/24/2015	0
9/25/2015	0	9/25/2015	0	9/25/2015	0	9/25/2015	0
9/26/2015	0	9/26/2015	0	9/26/2015	0	9/26/2015	0
9/27/2015	0	9/27/2015	0	9/27/2015	0	9/27/2015	0
9/28/2015	0	9/28/2015	0	9/28/2015	0	9/28/2015	0
9/29/2015	0	9/29/2015	0	9/29/2015	0	9/29/2015	0
9/30/2015	0	9/30/2015	0	9/30/2015	0	9/30/2015	0
10/1/2015	0	10/1/2015	0	10/1/2015	0	10/1/2015	0
10/2/2015	0	10/2/2015	0	10/2/2015	0	10/2/2015	0
10/3/2015	0	10/3/2015	0	10/3/2015	0	10/3/2015	0
10/4/2015	0	10/4/2015	0	10/4/2015	0	10/4/2015	0
10/5/2015	0	10/5/2015	0	10/5/2015	0	10/5/2015	0
10/6/2015	0	10/6/2015	0	10/6/2015	0	10/6/2015	0
10/7/2015	0	10/7/2015	0	10/7/2015	0	10/7/2015	0
10/8/2015	0	10/8/2015	0	10/8/2015	0	10/8/2015	0.03
10/9/2015	0	10/9/2015	0	10/9/2015	0.07	10/9/2015	0
10/10/2015	0	10/10/2015	0	10/10/2015	0.01	10/10/2015	0
10/11/2015	0	10/11/2015	0	10/11/2015	0	10/11/2015	0
10/12/2015	0	10/12/2015	0	10/12/2015	0	10/12/2015	0
10/13/2015	0	10/13/2015	0	10/13/2015	0	10/13/2015	0
10/14/2015	0	10/14/2015	0	10/14/2015	0	10/14/2015	0
10/15/2015	0	10/15/2015	0	10/15/2015	0	10/15/2015	0
10/16/2015	0	10/16/2015	0	10/16/2015	0	10/16/2015	0
10/17/2015	0	10/17/2015	0	10/17/2015	0	10/17/2015	0
10/18/2015	0	10/18/2015	0	10/18/2015	0	10/18/2015	0
10/19/2015	0	10/19/2015	0	10/19/2015	0	10/19/2015	0

10/20/2015	0	10/20/2015	0	10/20/2015	0	10/20/2015	0
10/21/2015	0	10/21/2015	0	10/21/2015	0.01	10/21/2015	0
10/22/2015	0	10/22/2015	0.07	10/22/2015	0.36	10/22/2015	0.08
10/23/2015	0.33	10/23/2015	0.1	10/23/2015	0.27	10/23/2015	0.51
10/24/2015	5.8	10/24/2015	3.12	10/24/2015	3.43	10/24/2015	2.99
10/25/2015	1.03	10/25/2015	0.23	10/25/2015	1.53	10/25/2015	0.16
10/26/2015	0.06	10/26/2015	0.08	10/26/2015	0	10/26/2015	0
10/27/2015	0	10/27/2015	0	10/27/2015	0	10/27/2015	0
10/28/2015	0	10/28/2015	0	10/28/2015	0	10/28/2015	0
10/29/2015	0	10/29/2015	0	10/29/2015	0	10/29/2015	0
10/30/2015	0.58	10/30/2015	1.08	10/30/2015	1.88	10/30/2015	1.73
10/31/2015	4.75	10/31/2015	6.61	10/31/2015	2.27	10/31/2015	0.67
11/1/2015	0.05	11/1/2015	0.04	11/1/2015	0	11/1/2015	0
11/2/2015	0	11/2/2015	0	11/2/2015	0	11/2/2015	0
11/3/2015	0	11/3/2015	0	11/3/2015	0	11/3/2015	0
11/4/2015	0	11/4/2015	0	11/4/2015	0	11/4/2015	0
11/5/2015	0.45	11/5/2015	0.16	11/5/2015	0.4	11/5/2015	0.12
11/6/2015	0.03	11/6/2015	0.08	11/6/2015	0.11	11/6/2015	0.01
11/7/2015	0	11/7/2015	0.04	11/7/2015	0.68	11/7/2015	0.82
11/8/2015	0.55	11/8/2015	0.03	11/8/2015	0.08	11/8/2015	0
11/9/2015	0	11/9/2015	0	11/9/2015	0	11/9/2015	0
11/10/2015	0	11/10/2015	0	11/10/2015	0	11/10/2015	0
11/11/2015	0	11/11/2015	0	11/11/2015	0	11/11/2015	0
11/12/2015	0	11/12/2015	0	11/12/2015	0	11/12/2015	0
11/13/2015	0	11/13/2015	0	11/13/2015	0	11/13/2015	0
11/14/2015	0	11/14/2015	0	11/14/2015	0	11/14/2015	0.19
11/15/2015	0.44	11/15/2015	0	11/15/2015	0.03	11/15/2015	0.02
11/16/2015	0	11/16/2015	0	11/16/2015	0	11/16/2015	0
11/17/2015	0.38	11/17/2015	0.39	11/17/2015	0.17	11/17/2015	0.42
11/18/2015	0	11/18/2015	0.06	11/18/2015	0	11/18/2015	0
11/19/2015	0	11/19/2015	0	11/19/2015	0	11/19/2015	0
11/20/2015	0	11/20/2015	0	11/20/2015	0	11/20/2015	0
11/21/2015	0	11/21/2015	0.02	11/21/2015	0	11/21/2015	0
11/22/2015	0	11/22/2015	0	11/22/2015	0.01	11/22/2015	0
11/23/2015	0	11/23/2015	0	11/23/2015	0	11/23/2015	0
11/24/2015	0	11/24/2015	0	11/24/2015	0	11/24/2015	0
11/25/2015	0	11/25/2015	0.02	11/25/2015	0.01	11/25/2015	0
11/26/2015	0.43	11/26/2015	0.07	11/26/2015	0.17	11/26/2015	0.18

11/27/2015	0.69	11/27/2015	0.44	11/27/2015	0.18	11/27/2015	0.96
11/28/2015	0.55	11/28/2015	0.81	11/28/2015	2.2	11/28/2015	0.46
11/29/2015	0.11	11/29/2015	0.03	11/29/2015	0.06	11/29/2015	0.02
11/30/2015	0.04	11/30/2015	0.03	11/30/2015	0.01	11/30/2015	0
12/1/2015	0	12/1/2015	0	12/1/2015	0	12/1/2015	0
12/2/2015	0	12/2/2015	0	12/2/2015	0	12/2/2015	0
12/3/2015	0	12/3/2015	0	12/3/2015	0	12/3/2015	0
12/4/2015	0	12/4/2015	0	12/4/2015	0	12/4/2015	0
12/5/2015	0	12/5/2015	0	12/5/2015	0	12/5/2015	0
12/6/2015	0	12/6/2015	0	12/6/2015	0	12/6/2015	0
12/7/2015	0	12/7/2015	0	12/7/2015	0	12/7/2015	0
12/8/2015	0	12/8/2015	0	12/8/2015	0	12/8/2015	0
12/9/2015	0	12/9/2015	0	12/9/2015	0	12/9/2015	0
12/10/2015	0	12/10/2015	0	12/10/2015	0	12/10/2015	0
12/11/2015	0	12/11/2015	0	12/11/2015	0	12/11/2015	0
12/12/2015	0	12/12/2015	0	12/12/2015	0	12/12/2015	0.08
12/13/2015	1.29	12/13/2015	1.13	12/13/2015	1.37	12/13/2015	1.06
12/14/2015	0	12/14/2015	0.08	12/14/2015	0	12/14/2015	0
12/15/2015	0	12/15/2015	0	12/15/2015	0	12/15/2015	0
12/16/2015	0	12/16/2015	0	12/16/2015	0	12/16/2015	0
12/17/2015	0	12/17/2015	0	12/17/2015	0	12/17/2015	0
12/18/2015	0	12/18/2015	0	12/18/2015	0	12/18/2015	0
12/19/2015	0	12/19/2015	0	12/19/2015	0	12/19/2015	0
12/20/2015	0	12/20/2015	0	12/20/2015	0	12/20/2015	0
12/21/2015	0	12/21/2015	0	12/21/2015	0	12/21/2015	0
12/22/2015	0	12/22/2015	0	12/22/2015	0	12/22/2015	0
12/23/2015	0	12/23/2015	0	12/23/2015	0	12/23/2015	0
12/24/2015	0	12/24/2015	0	12/24/2015	0	12/24/2015	0
12/25/2015	0	12/25/2015	0	12/25/2015	0	12/25/2015	0
12/26/2015	0	12/26/2015	0	12/26/2015	0	12/26/2015	0.11
12/27/2015	0.34	12/27/2015	0.12	12/27/2015	0.2	12/27/2015	0.26
12/28/2015	0.49	12/28/2015	0.63	12/28/2015	0.2	12/28/2015	0.09
12/29/2015	0	12/29/2015	0	12/29/2015	0	12/29/2015	0
12/30/2015	0	12/30/2015	0.09	12/30/2015	0.04	12/30/2015	0
12/31/2015	0	12/31/2015	0	12/31/2015	0	12/31/2015	0
1/1/2016	0	1/1/2016	0.04	1/1/2016	0	1/1/2016	0
1/2/2016	0	1/2/2016	0.11	1/2/2016	0.13	1/2/2016	0.07
1/3/2016	0	1/3/2016	0.53	1/3/2016	0.55	1/3/2016	0.07

1/4/2016	0	1/4/2016	0	1/4/2016	0	1/4/2016	0
1/5/2016	0	1/5/2016	0	1/5/2016	0	1/5/2016	0
1/6/2016	0	1/6/2016	0.02	1/6/2016	0.08	1/6/2016	0.05
1/7/2016	0.18	1/7/2016	0.14	1/7/2016	0.23	1/7/2016	0.01
1/8/2016	0	1/8/2016	0	1/8/2016	0	1/8/2016	0.14
1/9/2016	0	1/9/2016	0	1/9/2016	0.01	1/9/2016	0.14
1/10/2016	0	1/10/2016	0	1/10/2016	0	1/10/2016	0
1/11/2016	0	1/11/2016	0	1/11/2016	0	1/11/2016	0
1/12/2016	0	1/12/2016	0	1/12/2016	0	1/12/2016	0
1/13/2016	0	1/13/2016	0	1/13/2016	0	1/13/2016	0
1/14/2016	0	1/14/2016	0	1/14/2016	0	1/14/2016	0
1/15/2016	0	1/15/2016	0	1/15/2016	0	1/15/2016	0
1/16/2016	0	1/16/2016	0	1/16/2016	0	1/16/2016	0
1/17/2016	0	1/17/2016	0	1/17/2016	0	1/17/2016	0
1/18/2016	0	1/18/2016	0	1/18/2016	0	1/18/2016	0
1/19/2016	0	1/19/2016	0	1/19/2016	0	1/19/2016	0
1/20/2016	0	1/20/2016	0	1/20/2016	0	1/20/2016	0
1/21/2016	0	1/21/2016	0.03	1/21/2016	0	1/21/2016	0
1/22/2016	0	1/22/2016	0.01	1/22/2016	0	1/22/2016	0
1/23/2016	0	1/23/2016	0	1/23/2016	0	1/23/2016	0
1/24/2016	0	1/24/2016	0	1/24/2016	0	1/24/2016	0
1/25/2016	0	1/25/2016	0	1/25/2016	0	1/25/2016	0
1/26/2016	0	1/26/2016	0	1/26/2016	0	1/26/2016	0
1/27/2016	0	1/27/2016	0.26	1/27/2016	0.14	1/27/2016	0
1/28/2016	0	1/28/2016	0	1/28/2016	0	1/28/2016	0
1/29/2016	0	1/29/2016	0	1/29/2016	0	1/29/2016	0
1/30/2016	0	1/30/2016	0	1/30/2016	0	1/30/2016	0
1/31/2016	0	1/31/2016	0	1/31/2016	0	1/31/2016	0
2/1/2016	0	2/1/2016	0	2/1/2016	0	2/1/2016	0
2/2/2016	0	2/2/2016	0	2/2/2016	0	2/2/2016	0
2/3/2016	0	2/3/2016	0	2/3/2016	0	2/3/2016	0
2/4/2016	0	2/4/2016	0	2/4/2016	0	2/4/2016	0
2/5/2016	0	2/5/2016	0	2/5/2016	0	2/5/2016	0
2/6/2016	0	2/6/2016	0	2/6/2016	0	2/6/2016	0
2/7/2016	0	2/7/2016	0	2/7/2016	0	2/7/2016	0
2/8/2016	0	2/8/2016	0	2/8/2016	0	2/8/2016	0
2/9/2016	0	2/9/2016	0	2/9/2016	0	2/9/2016	0
2/10/2016	0	2/10/2016	0	2/10/2016	0	2/10/2016	0

2/11/2016	0	2/11/2016	0	2/11/2016	0	2/11/2016	0
2/12/2016	0	2/12/2016	0	2/12/2016	0	2/12/2016	0
2/13/2016	0	2/13/2016	0	2/13/2016	0	2/13/2016	0
2/14/2016	0	2/14/2016	0	2/14/2016	0	2/14/2016	0
2/15/2016	0	2/15/2016	0	2/15/2016	0	2/15/2016	0
2/16/2016	0	2/16/2016	0	2/16/2016	0	2/16/2016	0
2/17/2016	0	2/17/2016	0	2/17/2016	0	2/17/2016	0
2/18/2016	0	2/18/2016	0	2/18/2016	0	2/18/2016	0
2/19/2016	0	2/19/2016	0	2/19/2016	0	2/19/2016	0
2/20/2016	0	2/20/2016	0	2/20/2016	0.04	2/20/2016	0
2/21/2016	0	2/21/2016	0.02	2/21/2016	0.01	2/21/2016	0.01
2/22/2016	0.03	2/22/2016	0.03	2/22/2016	0	2/22/2016	0.51
2/23/2016	1.67	2/23/2016	1.32	2/23/2016	0.92	2/23/2016	0.36
2/24/2016	0	2/24/2016	0	2/24/2016	0	2/24/2016	0
2/25/2016	0	2/25/2016	0	2/25/2016	0	2/25/2016	0
2/26/2016	0	2/26/2016	0	2/26/2016	0	2/26/2016	0
2/27/2016	0	2/27/2016	0	2/27/2016	0	2/27/2016	0
2/28/2016	0	2/28/2016	0	2/28/2016	0	2/28/2016	0
2/29/2016	0	2/29/2016	0	2/29/2016	0	2/29/2016	0
3/1/2016	0	3/1/2016	0	3/1/2016	0	3/1/2016	0
3/2/2016	0	3/2/2016	0	3/2/2016	0	3/2/2016	0
3/3/2016	0	3/3/2016	0	3/3/2016	0	3/3/2016	0
3/4/2016	0	3/4/2016	0	3/4/2016	0	3/4/2016	0
3/5/2016	0	3/5/2016	0	3/5/2016	0	3/5/2016	0
3/6/2016	0	3/6/2016	0	3/6/2016	0	3/6/2016	0
3/7/2016	0	3/7/2016	0.01	3/7/2016	0.1	3/7/2016	0.02
3/8/2016	0.13	3/8/2016	0.11	3/8/2016	0.14	3/8/2016	0.65
3/9/2016	1.91	3/9/2016	1.26	3/9/2016	0.84	3/9/2016	0.5
3/10/2016	0.65	3/10/2016	0.96	3/10/2016	0.21	3/10/2016	0.49
3/11/2016	0.09	3/11/2016	0.15	3/11/2016	0.58	3/11/2016	1.08
3/12/2016	0.38	3/12/2016	0.53	3/12/2016	0.3	3/12/2016	0.01
3/13/2016	0	3/13/2016	0	3/13/2016	0	3/13/2016	0
3/14/2016	0	3/14/2016	0	3/14/2016	0	3/14/2016	0
3/15/2016	0	3/15/2016	0	3/15/2016	0	3/15/2016	0
3/16/2016	0	3/16/2016	0	3/16/2016	0	3/16/2016	0
3/17/2016	0	3/17/2016	0	3/17/2016	0.01	3/17/2016	0
3/18/2016	0	3/18/2016	0	3/18/2016	0	3/18/2016	0.91
3/19/2016	0	3/19/2016	0.31	3/19/2016	1.07	3/19/2016	0.12

3/20/2016	0	3/20/2016	0	3/20/2016	0	3/20/2016	0
3/21/2016	0	3/21/2016	0	3/21/2016	0	3/21/2016	0
3/22/2016	0	3/22/2016	0	3/22/2016	0	3/22/2016	0
3/23/2016	0	3/23/2016	0	3/23/2016	0	3/23/2016	0
3/24/2016	0.03	3/24/2016	0.26	3/24/2016	0.52	3/24/2016	0
3/25/2016	0	3/25/2016	0	3/25/2016	0	3/25/2016	0
3/26/2016	0	3/26/2016	0	3/26/2016	0	3/26/2016	0
3/27/2016	0	3/27/2016	0	3/27/2016	0	3/27/2016	0
3/28/2016	0	3/28/2016	0	3/28/2016	0.01	3/28/2016	0
3/29/2016	0	3/29/2016	0	3/29/2016	0	3/29/2016	0.01
3/30/2016	0.07	3/30/2016	0.09	3/30/2016	0.14	3/30/2016	0.01
3/31/2016	0.03	3/31/2016	0.08	3/31/2016	0.04	3/31/2016	0
4/1/2016	0.31	4/1/2016	0	4/1/2016	0.04	4/1/2016	0.3
4/2/2016	0.17	4/2/2016	0.07	4/2/2016	0.94	4/2/2016	0
4/3/2016	0	4/3/2016	0	4/3/2016	0	4/3/2016	0
4/4/2016	0	4/4/2016	0	4/4/2016	0	4/4/2016	0
4/5/2016	0	4/5/2016	0	4/5/2016	0	4/5/2016	0
4/6/2016	0	4/6/2016	0	4/6/2016	0	4/6/2016	0
4/7/2016	0	4/7/2016	0	4/7/2016	0	4/7/2016	0
4/8/2016	0	4/8/2016	0	4/8/2016	0	4/8/2016	0
4/9/2016	0	4/9/2016	0	4/9/2016	0.04	4/9/2016	0
4/10/2016	0.04	4/10/2016	0.02	4/10/2016	0	4/10/2016	0
4/11/2016	0	4/11/2016	0.03	4/11/2016	0.06	4/11/2016	0
4/12/2016	0.01	4/12/2016	0.02	4/12/2016	0	4/12/2016	0.91
4/13/2016	1.2	4/13/2016	1.39	4/13/2016	1.62	4/13/2016	0.02
4/14/2016	0	4/14/2016	0	4/14/2016	0	4/14/2016	0
4/15/2016	0	4/15/2016	0	4/15/2016	0	4/15/2016	0
4/16/2016	0	4/16/2016	0	4/16/2016	0.08	4/16/2016	0.04
4/17/2016	0.2	4/17/2016	0.05	4/17/2016	0.16	4/17/2016	0.11
4/18/2016	3	4/18/2016	0.42	4/18/2016	2.73	4/18/2016	0.47
4/19/2016	0.52	4/19/2016	1.31	4/19/2016	0.45	4/19/2016	0
4/20/2016	0.38	4/20/2016	0	4/20/2016	0	4/20/2016	0.15
4/21/2016	0.14	4/21/2016	0.39	4/21/2016	0.08	4/21/2016	0.31
4/22/2016	0.1	4/22/2016	0.63	4/22/2016	0.77	4/22/2016	0
4/23/2016	0	4/23/2016	0	4/23/2016	0	4/23/2016	0
4/24/2016	0	4/24/2016	0	4/24/2016	0	4/24/2016	0
4/25/2016	0	4/25/2016	0	4/25/2016	0	4/25/2016	0
4/26/2016	0	4/26/2016	0.02	4/26/2016	0.02	4/26/2016	0

4/27/2016	1.02	4/27/2016	0.26	4/27/2016	0.49	4/27/2016	0.5
4/28/2016	0	4/28/2016	0	4/28/2016	0	4/28/2016	0
4/29/2016	0	4/29/2016	0	4/29/2016	0	4/29/2016	0
4/30/2016	0.12	4/30/2016	0.54	4/30/2016	0.67	4/30/2016	0.12
5/1/2016	0	5/1/2016	0	5/1/2016	0	5/1/2016	0
5/2/2016	0	5/2/2016	0	5/2/2016	0	5/2/2016	0.03
5/3/2016	0.13	5/3/2016	0	5/3/2016	0	5/3/2016	0
5/4/2016	0	5/4/2016	0	5/4/2016	0	5/4/2016	0
5/5/2016	0	5/5/2016	0	5/5/2016	0	5/5/2016	0
5/6/2016	0	5/6/2016	0	5/6/2016	0	5/6/2016	0
5/7/2016	0	5/7/2016	0	5/7/2016	0	5/7/2016	0
5/8/2016	0	5/8/2016	0	5/8/2016	0	5/8/2016	0.04
5/9/2016	0.06	5/9/2016	0.04	5/9/2016	0.04	5/9/2016	0
5/10/2016	0	5/10/2016	0	5/10/2016	0	5/10/2016	0
5/11/2016	0.82	5/11/2016	0.63	5/11/2016	0.88	5/11/2016	0.06
5/12/2016	0	5/12/2016	0.02	5/12/2016	0	5/12/2016	0.44
5/13/2016	0	5/13/2016	0	5/13/2016	0	5/13/2016	0
5/14/2016	0.04	5/14/2016	0	5/14/2016	0.26	5/14/2016	1.75
5/15/2016	0.91	5/15/2016	0.04	5/15/2016	1.17	5/15/2016	0.06
5/16/2016	0.13	5/16/2016	0.69	5/16/2016	1.05	5/16/2016	0.01
5/17/2016	0.1	5/17/2016	0.03	5/17/2016	0.04	5/17/2016	0.3
5/18/2016	0.21	5/18/2016	2.62	5/18/2016	1.6	5/18/2016	0.02
5/19/2016	0.14	5/19/2016	0.08	5/19/2016	1.35	5/19/2016	2.2
5/20/2016	0	5/20/2016	2.09	5/20/2016	1.91	5/20/2016	0
5/21/2016	0	5/21/2016	0	5/21/2016	0	5/21/2016	0
5/22/2016	0.38	5/22/2016	0	5/22/2016	0.04	5/22/2016	0
5/23/2016	0.38	5/23/2016	0.03	5/23/2016	0.02	5/23/2016	0
5/24/2016	0	5/24/2016	0.06	5/24/2016	0	5/24/2016	0
5/25/2016	0	5/25/2016	0	5/25/2016	0	5/25/2016	0
5/26/2016	0.16	5/26/2016	0	5/26/2016	0	5/26/2016	0.61
5/27/2016	0.22	5/27/2016	0.04	5/27/2016	0	5/27/2016	0
5/28/2016	0.04	5/28/2016	0	5/28/2016	0	5/28/2016	0.04
5/29/2016	0.19	5/29/2016	0.31	5/29/2016	0.55	5/29/2016	0.34
5/30/2016	0.18	5/30/2016	0.37	5/30/2016	0.85	5/30/2016	1.03
5/31/2016	0.2	5/31/2016	0.39	5/31/2016	0.02	5/31/2016	1.61
6/1/2016	0.49	6/1/2016	1.72	6/1/2016	0.48	6/1/2016	0
6/2/2016	0.53	6/2/2016	1.18	6/2/2016	1.71	6/2/2016	1.41
6/3/2016	0	6/3/2016	0.29	6/3/2016	0.21	6/3/2016	0.07

6/4/2016	2.45	6/4/2016	0.08	6/4/2016	0.2	6/4/2016	0
6/5/2016	0	6/5/2016	0.05	6/5/2016	0	6/5/2016	0
6/6/2016	0	6/6/2016	0	6/6/2016	0	6/6/2016	0
6/7/2016	0	6/7/2016	0	6/7/2016	0	6/7/2016	0
6/8/2016	0	6/8/2016	0	6/8/2016	0	6/8/2016	0
6/9/2016	0	6/9/2016	0	6/9/2016	0	6/9/2016	0.03
6/10/2016	0	6/10/2016	0	6/10/2016	0	6/10/2016	0
6/11/2016	0	6/11/2016	0	6/11/2016	0	6/11/2016	0
6/12/2016	0	6/12/2016	0	6/12/2016	0	6/12/2016	0
6/13/2016	0	6/13/2016	0	6/13/2016	0	6/13/2016	0
6/14/2016	0	6/14/2016	0	6/14/2016	0	6/14/2016	0
6/15/2016	0	6/15/2016	0	6/15/2016	0	6/15/2016	0
6/16/2016	0	6/16/2016	0	6/16/2016	0	6/16/2016	0
6/17/2016	0	6/17/2016	0	6/17/2016	0	6/17/2016	0
6/18/2016	0	6/18/2016	0	6/18/2016	0	6/18/2016	0
6/19/2016	0	6/19/2016	0	6/19/2016	0	6/19/2016	0.23
6/20/2016	0	6/20/2016	0	6/20/2016	0.1	6/20/2016	0.21
6/21/2016	0	6/21/2016	0	6/21/2016	0	6/21/2016	0
6/22/2016	0	6/22/2016	0	6/22/2016	0	6/22/2016	0
6/23/2016	0	6/23/2016	0	6/23/2016	0	6/23/2016	0
6/24/2016	0	6/24/2016	0	6/24/2016	0	6/24/2016	0
6/25/2016	0	6/25/2016	0	6/25/2016	0	6/25/2016	0.01
6/26/2016	0	6/26/2016	0.16	6/26/2016	0.09	6/26/2016	0
6/27/2016	0	6/27/2016	0	6/27/2016	0.03	6/27/2016	0
6/28/2016	0	6/28/2016	0	6/28/2016	0	6/28/2016	0.17
6/29/2016	0.14	6/29/2016	0.06	6/29/2016	0	6/29/2016	0
6/30/2016	0	6/30/2016	0	6/30/2016	0	6/30/2016	0
7/1/2016	0	7/1/2016	0	7/1/2016	0	7/1/2016	0
7/2/2016	0	7/2/2016	0	7/2/2016	0	7/2/2016	0
7/3/2016	0	7/3/2016	0	7/3/2016	0	7/3/2016	0
7/4/2016	0	7/4/2016	0	7/4/2016	0	7/4/2016	0
7/5/2016	0	7/5/2016	0	7/5/2016	0	7/5/2016	0
7/6/2016	0	7/6/2016	0	7/6/2016	0	7/6/2016	0
7/7/2016	0	7/7/2016	0	7/7/2016	0	7/7/2016	0
7/8/2016	0	7/8/2016	0	7/8/2016	0	7/8/2016	0
7/9/2016	0	7/9/2016	0	7/9/2016	0	7/9/2016	0
7/10/2016	0.42	7/10/2016	0	7/10/2016	0	7/10/2016	0
7/11/2016	0	7/11/2016	0	7/11/2016	0	7/11/2016	0

7/12/2016	0	7/12/2016	0	7/12/2016	0	7/12/2016	0
7/13/2016	0	7/13/2016	0	7/13/2016	0	7/13/2016	0
7/14/2016	0	7/14/2016	0	7/14/2016	0	7/14/2016	0
7/15/2016	0	7/15/2016	0	7/15/2016	0	7/15/2016	0
7/16/2016	0	7/16/2016	0	7/16/2016	0	7/16/2016	0
7/17/2016	0	7/17/2016	0	7/17/2016	0	7/17/2016	0
7/18/2016	0	7/18/2016	0	7/18/2016	0	7/18/2016	0
7/19/2016	0	7/19/2016	0	7/19/2016	0	7/19/2016	0
7/20/2016	0	7/20/2016	0	7/20/2016	0	7/20/2016	0
7/21/2016	0	7/21/2016	0	7/21/2016	0	7/21/2016	0
7/22/2016	0	7/22/2016	0	7/22/2016	0	7/22/2016	0
7/23/2016	0	7/23/2016	0	7/23/2016	0	7/23/2016	0
7/24/2016	0	7/24/2016	0	7/24/2016	0	7/24/2016	0
7/25/2016	0	7/25/2016	0	7/25/2016	0	7/25/2016	1.47
7/26/2016	0.38	7/26/2016	3.67	7/26/2016	0.08	7/26/2016	1.47
7/27/2016	0	7/27/2016	0.03	7/27/2016	0.49	7/27/2016	0
7/28/2016	0	7/28/2016	0.59	7/28/2016	0.05	7/28/2016	0
7/29/2016	0	7/29/2016	0.03	7/29/2016	0	7/29/2016	0
7/30/2016	0	7/30/2016	0	7/30/2016	0	7/30/2016	0
7/31/2016	0	7/31/2016	0	7/31/2016	0	7/31/2016	0
8/1/2016	0	8/1/2016	0	8/1/2016	0	8/1/2016	0
8/2/2016	0	8/2/2016	0	8/2/2016	0	8/2/2016	0
8/3/2016	0	8/3/2016	0	8/3/2016	0	8/3/2016	0
8/4/2016	0	8/4/2016	0	8/4/2016	0	8/4/2016	0
8/5/2016	0	8/5/2016	0	8/5/2016	0	8/5/2016	0
8/6/2016	0	8/6/2016	0	8/6/2016	0	8/6/2016	0
8/7/2016	0	8/7/2016	0	8/7/2016	0	8/7/2016	0
8/8/2016	0	8/8/2016	0	8/8/2016	0	8/8/2016	0
8/9/2016	0	8/9/2016	0	8/9/2016	0	8/9/2016	0
8/10/2016	0	8/10/2016	0	8/10/2016	0	8/10/2016	0
8/11/2016	0	8/11/2016	0	8/11/2016	0	8/11/2016	0
8/12/2016	0	8/12/2016	0	8/12/2016	0	8/12/2016	0.04
8/13/2016	0	8/13/2016	0.06	8/13/2016	0	8/13/2016	0.61
8/14/2016	1.91	8/14/2016	0.11	8/14/2016	0.02	8/14/2016	0.04
8/15/2016	1.8	8/15/2016	3.42	8/15/2016	1.07	8/15/2016	1.95
8/16/2016	2.36	8/16/2016	1.83	8/16/2016	1.65	8/16/2016	0.97
8/17/2016	2.7	8/17/2016	0.89	8/17/2016	0.15	8/17/2016	0.33
8/18/2016	0.5	8/18/2016	0.86	8/18/2016	0.5	8/18/2016	0.26

8/19/2016	0	8/19/2016	0.03	8/19/2016	0	8/19/2016	0
8/20/2016	0.04	8/20/2016	0	8/20/2016	0.05	8/20/2016	0.43
8/21/2016	1.85	8/21/2016	3.24	8/21/2016	1.52	8/21/2016	0.31
8/22/2016	0.16	8/22/2016	0.17	8/22/2016	0.02	8/22/2016	0.34
8/23/2016	0.15	8/23/2016	0.69	8/23/2016	0	8/23/2016	0
8/24/2016	0	8/24/2016	0	8/24/2016	0	8/24/2016	0
8/25/2016	0	8/25/2016	0	8/25/2016	0	8/25/2016	0
8/26/2016	0	8/26/2016	0	8/26/2016	0.02	8/26/2016	0
8/27/2016	0	8/27/2016	0	8/27/2016	0	8/27/2016	0
8/28/2016	0	8/28/2016	0	8/28/2016	0	8/28/2016	0.02
8/29/2016	0.23	8/29/2016	0.22	8/29/2016	0	8/29/2016	0.02
8/30/2016	0	8/30/2016	0.02	8/30/2016	0.15	8/30/2016	0.01
8/31/2016	0	8/31/2016	0.04	8/31/2016	0.03	8/31/2016	0
9/1/2016	0	9/1/2016	0	9/1/2016	0	9/1/2016	0
9/2/2016	0	9/2/2016	0	9/2/2016	0	9/2/2016	0
9/3/2016	0	9/3/2016	0.08	9/3/2016	0	9/3/2016	0
9/4/2016	0	9/4/2016	0	9/4/2016	0.02	9/4/2016	0.23
9/5/2016	0.09	9/5/2016	0.07	9/5/2016	0	9/5/2016	0.23
9/6/2016	0	9/6/2016	0.02	9/6/2016	0	9/6/2016	0
9/7/2016	0	9/7/2016	0.01	9/7/2016	0	9/7/2016	0
9/8/2016	0	9/8/2016	0	9/8/2016	0	9/8/2016	0
9/9/2016	0	9/9/2016	0	9/9/2016	0	9/9/2016	0
9/10/2016	0.01	9/10/2016	0	9/10/2016	0	9/10/2016	0.02
9/11/2016	0	9/11/2016	0.39	9/11/2016	0	9/11/2016	0
9/12/2016	0	9/12/2016	0	9/12/2016	0	9/12/2016	0
9/13/2016	0	9/13/2016	0	9/13/2016	0.01	9/13/2016	0
9/14/2016	0	9/14/2016	0	9/14/2016	0	9/14/2016	0
9/15/2016	0	9/15/2016	0	9/15/2016	0	9/15/2016	0
9/16/2016	0	9/16/2016	0	9/16/2016	0.04	9/16/2016	0
9/17/2016	0	9/17/2016	0	9/17/2016	0	9/17/2016	0
9/18/2016	0	9/18/2016	0	9/18/2016	0	9/18/2016	0
9/19/2016	0	9/19/2016	0	9/19/2016	0	9/19/2016	0
9/20/2016	0	9/20/2016	0	9/20/2016	0	9/20/2016	0
9/21/2016	0	9/21/2016	0	9/21/2016	0	9/21/2016	0
9/22/2016	0	9/22/2016	0	9/22/2016	0	9/22/2016	0
9/23/2016	0	9/23/2016	0	9/23/2016	0.08	9/23/2016	0
9/24/2016	0	9/24/2016	0	9/24/2016	0	9/24/2016	0
9/25/2016	0.33	9/25/2016	0	9/25/2016	0	9/25/2016	0.33

9/26/2016	0.33	9/26/2016	3.06	9/26/2016	2.2	9/26/2016	0.51
9/27/2016	0	9/27/2016	1.47	9/27/2016	0.38	9/27/2016	0
9/28/2016	0	9/28/2016	0	9/28/2016	0	9/28/2016	0
9/29/2016	0	9/29/2016	0	9/29/2016	0	9/29/2016	0
9/30/2016	0	9/30/2016	0	9/30/2016	0	9/30/2016	0
10/1/2016	0	10/1/2016	0	10/1/2016	0	10/1/2016	0
10/2/2016	0	10/2/2016	0	10/2/2016	0	10/2/2016	0
10/3/2016	0	10/3/2016	0	10/3/2016	0	10/3/2016	0
10/4/2016	0	10/4/2016	0	10/4/2016	0	10/4/2016	0
10/5/2016	0	10/5/2016	0	10/5/2016	0	10/5/2016	0
10/6/2016	0	10/6/2016	0	10/6/2016	0	10/6/2016	0
10/7/2016	0.04	10/7/2016	0	10/7/2016	0	10/7/2016	0.4
10/8/2016	0	10/8/2016	0.26	10/8/2016	0	10/8/2016	0
10/9/2016	0	10/9/2016	0	10/9/2016	0	10/9/2016	0
10/10/2016	0	10/10/2016	0	10/10/2016	0	10/10/2016	0
10/11/2016	0	10/11/2016	0	10/11/2016	0	10/11/2016	0
10/12/2016	0	10/12/2016	0	10/12/2016	0	10/12/2016	0
10/13/2016	0	10/13/2016	0	10/13/2016	0	10/13/2016	0.03
10/14/2016	0.14	10/14/2016	0	10/14/2016	0	10/14/2016	0
10/15/2016	0	10/15/2016	0	10/15/2016	0	10/15/2016	0
10/16/2016	0	10/16/2016	0	10/16/2016	0	10/16/2016	0
10/17/2016	0	10/17/2016	0	10/17/2016	0	10/17/2016	0
10/18/2016	0	10/18/2016	0	10/18/2016	0	10/18/2016	0
10/19/2016	0	10/19/2016	0	10/19/2016	0	10/19/2016	0
10/20/2016	0	10/20/2016	0	10/20/2016	0	10/20/2016	0
10/21/2016	0	10/21/2016	0.26	10/21/2016	0	10/21/2016	0
10/22/2016	0	10/22/2016	0	10/22/2016	0	10/22/2016	0
10/23/2016	0	10/23/2016	0	10/23/2016	0	10/23/2016	0
10/24/2016	0	10/24/2016	0.06	10/24/2016	0	10/24/2016	0
10/25/2016	0	10/25/2016	0.01	10/25/2016	0	10/25/2016	0
10/26/2016	0	10/26/2016	0	10/26/2016	0	10/26/2016	0
10/27/2016	0	10/27/2016	0	10/27/2016	0	10/27/2016	0
10/28/2016	0	10/28/2016	0	10/28/2016	0	10/28/2016	0
10/29/2016	0	10/29/2016	0	10/29/2016	0	10/29/2016	0
10/30/2016	0	10/30/2016	0	10/30/2016	0	10/30/2016	0
10/31/2016	0	10/31/2016	0	10/31/2016	0	10/31/2016	0
11/1/2016	0	11/1/2016	0	11/1/2016	0	11/1/2016	0
11/2/2016	0.02	11/2/2016	0.02	11/2/2016	0.03	11/2/2016	0

11/3/2016	0	11/3/2016	0	11/3/2016	0.08	11/3/2016	2.96
11/4/2016	0.4	11/4/2016	0.31	11/4/2016	0.07	11/4/2016	0
11/5/2016	0	11/5/2016	0	11/5/2016	0.01	11/5/2016	0
11/6/2016	0	11/6/2016	0	11/6/2016	0	11/6/2016	1.09
11/7/2016	0.84	11/7/2016	0.62	11/7/2016	0.52	11/7/2016	1.14
11/8/2016	0.94	11/8/2016	0.34	11/8/2016	0.52	11/8/2016	0.73
11/9/2016	0.14	11/9/2016	1.11	11/9/2016	1.62	11/9/2016	0.82
11/10/2016	0.16	11/10/2016	0.03	11/10/2016	0.16	11/10/2016	0
11/11/2016	0	11/11/2016	0	11/11/2016	0.03	11/11/2016	0
11/12/2016	0	11/12/2016	0.02	11/12/2016	0.03	11/12/2016	0
11/13/2016	0	11/13/2016	0	11/13/2016	0	11/13/2016	0
11/14/2016	0	11/14/2016	0	11/14/2016	0	11/14/2016	0
11/15/2016	0	11/15/2016	0	11/15/2016	0	11/15/2016	0
11/16/2016	0	11/16/2016	0	11/16/2016	0	11/16/2016	0
11/17/2016	0	11/17/2016	0	11/17/2016	0	11/17/2016	0
11/18/2016	0	11/18/2016	0	11/18/2016	0	11/18/2016	0.01
11/19/2016	0.06	11/19/2016	0	11/19/2016	0	11/19/2016	0
11/20/2016	0	11/20/2016	0	11/20/2016	0	11/20/2016	0
11/21/2016	0	11/21/2016	0	11/21/2016	0	11/21/2016	0
11/22/2016	0	11/22/2016	0	11/22/2016	0	11/22/2016	0.01
11/23/2016	0.43	11/23/2016	0	11/23/2016	0	11/23/2016	0.09
11/24/2016	0	11/24/2016	0	11/24/2016	0	11/24/2016	0
11/25/2016	0	11/25/2016	0	11/25/2016	0	11/25/2016	0
11/26/2016	0	11/26/2016	0	11/26/2016	0	11/26/2016	0
11/27/2016	0	11/27/2016	0	11/27/2016	0	11/27/2016	0
11/28/2016	0	11/28/2016	0	11/28/2016	0	11/28/2016	0
11/29/2016	0	11/29/2016	0	11/29/2016	0	11/29/2016	0
11/30/2016	0	11/30/2016	0	11/30/2016	0	11/30/2016	0
12/1/2016	0	12/1/2016	0	12/1/2016	0	12/1/2016	0
12/2/2016	0	12/2/2016	0	12/2/2016	0	12/2/2016	0.34
12/3/2016	0.7	12/3/2016	2.64	12/3/2016	1.28	12/3/2016	0.73
12/4/2016	0.67	12/4/2016	1.38	12/4/2016	0.7	12/4/2016	0.26
12/5/2016	0.3	12/5/2016	0.84	12/5/2016	1.1	12/5/2016	0.21
12/6/2016	0.38	12/6/2016	0.19	12/6/2016	0.13	12/6/2016	0
12/7/2016	0	12/7/2016	0	12/7/2016	0	12/7/2016	0
12/8/2016	0	12/8/2016	0	12/8/2016	0	12/8/2016	0
12/9/2016	0	12/9/2016	0	12/9/2016	0	12/9/2016	0
12/10/2016	0	12/10/2016	0	12/10/2016	0	12/10/2016	0

12/11/2016	0.03	12/11/2016	0.07	12/11/2016	0.12	12/11/2016	0
12/12/2016	0	12/12/2016	0.01	12/12/2016	0	12/12/2016	0
12/13/2016	0	12/13/2016	0	12/13/2016	0	12/13/2016	0
12/14/2016	0	12/14/2016	0	12/14/2016	0	12/14/2016	0
12/15/2016	0	12/15/2016	0	12/15/2016	0.01	12/15/2016	0
12/16/2016	0	12/16/2016	0	12/16/2016	0	12/16/2016	0
12/17/2016	0	12/17/2016	0.02	12/17/2016	0	12/17/2016	0
12/18/2016	0	12/18/2016	0.02	12/18/2016	0	12/18/2016	0
12/19/2016	0	12/19/2016	0	12/19/2016	0	12/19/2016	0
12/20/2016	0	12/20/2016	0	12/20/2016	0	12/20/2016	0
12/21/2016	0	12/21/2016	0	12/21/2016	0	12/21/2016	0
12/22/2016	0	12/22/2016	0	12/22/2016	0	12/22/2016	0
12/23/2016	0.08	12/23/2016	0	12/23/2016	0	12/23/2016	0
12/24/2016	0	12/24/2016	0.07	12/24/2016	0.1	12/24/2016	0
12/25/2016	0	12/25/2016	0.07	12/25/2016	0.01	12/25/2016	0
12/26/2016	0	12/26/2016	0	12/26/2016	0	12/26/2016	0
12/27/2016	0	12/27/2016	0	12/27/2016	0	12/27/2016	0
12/28/2016	0	12/28/2016	0	12/28/2016	0.02	12/28/2016	0
12/29/2016	0	12/29/2016	0	12/29/2016	0	12/29/2016	0
12/30/2016	0	12/30/2016	0	12/30/2016	0	12/30/2016	0
12/31/2016	0	12/31/2016	0	12/31/2016	0	12/31/2016	0
1/1/2017	0	1/1/2017	0.04	1/1/2017	0	1/1/2017	0
1/2/2017	0	1/2/2017	0.06	1/2/2017	0.04	1/2/2017	0.4
1/3/2017	0.53	1/3/2017	0	1/3/2017	0	1/3/2017	0
1/4/2017	0	1/4/2017	0	1/4/2017	0	1/4/2017	0
1/5/2017	0	1/5/2017	0	1/5/2017	0	1/5/2017	0
1/6/2017	0	1/6/2017	0	1/6/2017	0	1/6/2017	0
1/7/2017	0	1/7/2017	0	1/7/2017	0	1/7/2017	0
1/8/2017	0	1/8/2017	0	1/8/2017	0	1/8/2017	0
1/9/2017	0	1/9/2017	0	1/9/2017	0	1/9/2017	0
1/10/2017	0.02	1/10/2017	0	1/10/2017	0.06	1/10/2017	0
1/11/2017	0	1/11/2017	0	1/11/2017	0	1/11/2017	0
1/12/2017	0	1/12/2017	0	1/12/2017	0	1/12/2017	0
1/13/2017	0.04	1/13/2017	0.18	1/13/2017	0.02	1/13/2017	0.22
1/14/2017	0.34	1/14/2017	0.44	1/14/2017	0.41	1/14/2017	0.01
1/15/2017	0.03	1/15/2017	0.01	1/15/2017	0.03	1/15/2017	0.88
1/16/2017	0.47	1/16/2017	0.99	1/16/2017	2.14	1/16/2017	0.01
1/17/2017	0	1/17/2017	0.01	1/17/2017	0	1/17/2017	0.09

1/18/2017	1.99	1/18/2017	1.22	1/18/2017	1.21	1/18/2017	0.34
1/19/2017	0.1	1/19/2017	0.62	1/19/2017	0.01	1/19/2017	0
1/20/2017	0	1/20/2017	0	1/20/2017	0	1/20/2017	0
1/21/2017	0	1/21/2017	0	1/21/2017	0	1/21/2017	0
1/22/2017	0	1/22/2017	0	1/22/2017	0	1/22/2017	0
1/23/2017	0	1/23/2017	0	1/23/2017	0	1/23/2017	0
1/24/2017	0	1/24/2017	0	1/24/2017	0	1/24/2017	0
1/25/2017	0	1/25/2017	0	1/25/2017	0	1/25/2017	0
1/26/2017	0	1/26/2017	0	1/26/2017	0	1/26/2017	0
1/27/2017	0	1/27/2017	0	1/27/2017	0	1/27/2017	0
1/28/2017	0	1/28/2017	0	1/28/2017	0	1/28/2017	0
1/29/2017	0	1/29/2017	0	1/29/2017	0	1/29/2017	0
1/30/2017	0	1/30/2017	0	1/30/2017	0	1/30/2017	0
1/31/2017	0	1/31/2017	0	1/31/2017	0	1/31/2017	0
2/1/2017	0	2/1/2017	0	2/1/2017	0	2/1/2017	0
2/2/2017	0	2/2/2017	0	2/2/2017	0	2/2/2017	0
2/3/2017	0	2/3/2017	0	2/3/2017	0	2/3/2017	0
2/4/2017	0	2/4/2017	0.09	2/4/2017	0	2/4/2017	0
2/5/2017	0.01	2/5/2017	0.03	2/5/2017	0.02	2/5/2017	0
2/6/2017	0	2/6/2017	0	2/6/2017	0.01	2/6/2017	0
2/7/2017	0	2/7/2017	0	2/7/2017	0	2/7/2017	0
2/8/2017	0	2/8/2017	0	2/8/2017	0	2/8/2017	0
2/9/2017	0	2/9/2017	0	2/9/2017	0	2/9/2017	0
2/10/2017	0	2/10/2017	0	2/10/2017	0	2/10/2017	0
2/11/2017	0	2/11/2017	0	2/11/2017	0	2/11/2017	0
2/12/2017	0	2/12/2017	0	2/12/2017	0	2/12/2017	0
2/13/2017	0	2/13/2017	0	2/13/2017	0	2/13/2017	1.1
2/14/2017	0.87	2/14/2017	1.09	2/14/2017	1.9	2/14/2017	0.77
2/15/2017	0	2/15/2017	0.28	2/15/2017	0	2/15/2017	0
2/16/2017	0	2/16/2017	0	2/16/2017	0	2/16/2017	0
2/17/2017	0	2/17/2017	0	2/17/2017	0	2/17/2017	0
2/18/2017	0	2/18/2017	0	2/18/2017	0	2/18/2017	0
2/19/2017	0	2/19/2017	0	2/19/2017	0.85	2/19/2017	0.84
2/20/2017	1.26	2/20/2017	0.98	2/20/2017	0.87	2/20/2017	0.12
2/21/2017	0	2/21/2017	0	2/21/2017	0	2/21/2017	0
2/22/2017	0	2/22/2017	0	2/22/2017	0	2/22/2017	0
2/23/2017	0	2/23/2017	0	2/23/2017	0	2/23/2017	0
2/24/2017	0	2/24/2017	0	2/24/2017	0	2/24/2017	0

2/25/2017	0	2/25/2017	0	2/25/2017	0	2/25/2017	0
2/26/2017	0	2/26/2017	0	2/26/2017	0	2/26/2017	0
2/27/2017	0	2/27/2017	0	2/27/2017	0	2/27/2017	0
2/28/2017	0	2/28/2017	0	2/28/2017	0	2/28/2017	0
3/1/2017	0	3/1/2017	0	3/1/2017	0	3/1/2017	0
3/2/2017	0	3/2/2017	0	3/2/2017	0	3/2/2017	0
3/3/2017	0	3/3/2017	0	3/3/2017	0	3/3/2017	0
3/4/2017	0	3/4/2017	0	3/4/2017	0	3/4/2017	0.33
3/5/2017	0.7	3/5/2017	1.36	3/5/2017	0.97	3/5/2017	0.09
3/6/2017	0.05	3/6/2017	0.02	3/6/2017	0.02	3/6/2017	0
3/7/2017	0	3/7/2017	0	3/7/2017	0	3/7/2017	0.01
3/8/2017	0	3/8/2017	0	3/8/2017	0	3/8/2017	0
3/9/2017	0.03	3/9/2017	0	3/9/2017	0	3/9/2017	0
3/10/2017	0	3/10/2017	0.68	3/10/2017	0	3/10/2017	0
3/11/2017	0.77	3/11/2017	0.27	3/11/2017	0.07	3/11/2017	0.27
3/12/2017	0	3/12/2017	0.37	3/12/2017	0.16	3/12/2017	0.02
3/13/2017	0	3/13/2017	0.02	3/13/2017	0.02	3/13/2017	0
3/14/2017	0	3/14/2017	0.01	3/14/2017	0	3/14/2017	0
3/15/2017	0	3/15/2017	0	3/15/2017	0	3/15/2017	0
3/16/2017	0	3/16/2017	0	3/16/2017	0	3/16/2017	0
3/17/2017	0	3/17/2017	0	3/17/2017	0	3/17/2017	0
3/18/2017	0	3/18/2017	0	3/18/2017	0	3/18/2017	0
3/19/2017	0	3/19/2017	0	3/19/2017	0	3/19/2017	0
3/20/2017	0	3/20/2017	0	3/20/2017	0	3/20/2017	0
3/21/2017	0	3/21/2017	0	3/21/2017	0	3/21/2017	0
3/22/2017	0	3/22/2017	0	3/22/2017	0	3/22/2017	0
3/23/2017	0	3/23/2017	0	3/23/2017	0	3/23/2017	0
3/24/2017	0.02	3/24/2017	0	3/24/2017	0	3/24/2017	0.02
3/25/2017	0	3/25/2017	0.04	3/25/2017	0.02	3/25/2017	0
3/26/2017	0	3/26/2017	0	3/26/2017	0	3/26/2017	0
3/27/2017	0	3/27/2017	0	3/27/2017	0	3/27/2017	0
3/28/2017	0	3/28/2017	0	3/28/2017	0	3/28/2017	0
3/29/2017	1.27	3/29/2017	0.87	3/29/2017	0.55	3/29/2017	0.52
3/30/2017	0	3/30/2017	0	3/30/2017	0	3/30/2017	0
3/31/2017	0	3/31/2017	0	3/31/2017	0	3/31/2017	0
4/1/2017	0	4/1/2017	0	4/1/2017	0	4/1/2017	0
4/2/2017	0.57	4/2/2017	0.04	4/2/2017	0.15	4/2/2017	1.83
4/3/2017	0	4/3/2017	1.09	4/3/2017	0.96	4/3/2017	0

4/4/2017	0	4/4/2017	0	4/4/2017	0	4/4/2017	0
4/5/2017	0	4/5/2017	0	4/5/2017	0	4/5/2017	0
4/6/2017	0	4/6/2017	0	4/6/2017	0	4/6/2017	0
4/7/2017	0	4/7/2017	0	4/7/2017	0	4/7/2017	0
4/8/2017	0	4/8/2017	0	4/8/2017	0	4/8/2017	0
4/9/2017	0	4/9/2017	0	4/9/2017	0	4/9/2017	0
4/10/2017	0	4/10/2017	0	4/10/2017	0	4/10/2017	0.01
4/11/2017	0.38	4/11/2017	0.04	4/11/2017	0.25	4/11/2017	0.42
4/12/2017	0.79	4/12/2017	2.74	4/12/2017	2.25	4/12/2017	0
4/13/2017	0	4/13/2017	0	4/13/2017	0.1	4/13/2017	0
4/14/2017	0	4/14/2017	0	4/14/2017	0.02	4/14/2017	0
4/15/2017	0	4/15/2017	0	4/15/2017	0	4/15/2017	0
4/16/2017	0	4/16/2017	0	4/16/2017	0	4/16/2017	0
4/17/2017	0	4/17/2017	0	4/17/2017	0.5	4/17/2017	0.22
4/18/2017	0.23	4/18/2017	1.69	4/18/2017	0	4/18/2017	0
4/19/2017	0	4/19/2017	0	4/19/2017	0	4/19/2017	0
4/20/2017	0	4/20/2017	0	4/20/2017	0	4/20/2017	0
4/21/2017	0	4/21/2017	0	4/21/2017	0	4/21/2017	0
4/22/2017	0.1	4/22/2017	0	4/22/2017	0	4/22/2017	0.01
4/23/2017	0.01	4/23/2017	0.02	4/23/2017	0	4/23/2017	0
4/24/2017	0	4/24/2017	0	4/24/2017	0	4/24/2017	0
4/25/2017	0	4/25/2017	0	4/25/2017	0	4/25/2017	0
4/26/2017	0	4/26/2017	0	4/26/2017	0	4/26/2017	0
4/27/2017	0	4/27/2017	0	4/27/2017	0	4/27/2017	0
4/28/2017	0	4/28/2017	0	4/28/2017	0	4/28/2017	0
4/29/2017	0	4/29/2017	0	4/29/2017	0	4/29/2017	0.02
4/30/2017	0	4/30/2017	0.18	4/30/2017	0.15	4/30/2017	0.03
5/1/2017	0	5/1/2017	0	5/1/2017	0	5/1/2017	0
5/2/2017	0	5/2/2017	0	5/2/2017	0	5/2/2017	0
5/3/2017	0	5/3/2017	0.02	5/3/2017	0	5/3/2017	0
5/4/2017	0	5/4/2017	0	5/4/2017	0	5/4/2017	0
5/5/2017	0	5/5/2017	0	5/5/2017	0	5/5/2017	0
5/6/2017	0	5/6/2017	0	5/6/2017	0	5/6/2017	0
5/7/2017	0	5/7/2017	0	5/7/2017	0	5/7/2017	0
5/8/2017	0	5/8/2017	0	5/8/2017	0	5/8/2017	0
5/9/2017	0	5/9/2017	0	5/9/2017	0.01	5/9/2017	0.04
5/10/2017	0.07	5/10/2017	0.13	5/10/2017	0.09	5/10/2017	0
5/11/2017	0	5/11/2017	0	5/11/2017	0	5/11/2017	0

5/12/2017	0.01	5/12/2017	0	5/12/2017	0	5/12/2017	0
5/13/2017	0	5/13/2017	0	5/13/2017	0	5/13/2017	0
5/14/2017	0	5/14/2017	0	5/14/2017	0	5/14/2017	0
5/15/2017	0	5/15/2017	0	5/15/2017	0	5/15/2017	0
5/16/2017	0	5/16/2017	0	5/16/2017	0.02	5/16/2017	0
5/17/2017	0.14	5/17/2017	0	5/17/2017	0.11	5/17/2017	0.06
5/18/2017	0	5/18/2017	0.14	5/18/2017	0	5/18/2017	0
5/19/2017	0	5/19/2017	0	5/19/2017	0	5/19/2017	0
5/20/2017	0.9	5/20/2017	0	5/20/2017	0.04	5/20/2017	0.31
5/21/2017	0	5/21/2017	0.07	5/21/2017	0.1	5/21/2017	0
5/22/2017	0.16	5/22/2017	0.36	5/22/2017	0.55	5/22/2017	0
5/23/2017	0	5/23/2017	0	5/23/2017	0	5/23/2017	0
5/24/2017	0.02	5/24/2017	0.02	5/24/2017	0	5/24/2017	0
5/25/2017	0	5/25/2017	0	5/25/2017	0	5/25/2017	0
5/26/2017	0	5/26/2017	0	5/26/2017	0	5/26/2017	0
5/27/2017	0	5/27/2017	0	5/27/2017	0.03	5/27/2017	0
5/28/2017	0	5/28/2017	0	5/28/2017	0	5/28/2017	0
5/29/2017	0.14	5/29/2017	0.08	5/29/2017	0.75	5/29/2017	0
5/30/2017	0	5/30/2017	0	5/30/2017	0	5/30/2017	0
5/31/2017	0	5/31/2017	0.13	5/31/2017	0.71	5/31/2017	0
6/1/2017	0	6/1/2017	0.27	6/1/2017	0.21	6/1/2017	0
6/2/2017	0	6/2/2017	0	6/2/2017	0	6/2/2017	0
6/3/2017	0	6/3/2017	0	6/3/2017	0.06	6/3/2017	0.31
6/4/2017	0	6/4/2017	0	6/4/2017	0	6/4/2017	0.05
6/5/2017	0	6/5/2017	0.78	6/5/2017	0.24	6/5/2017	0.03
6/6/2017	0	6/6/2017	0.22	6/6/2017	0.24	6/6/2017	0
6/7/2017	0	6/7/2017	0	6/7/2017	0	6/7/2017	0
6/8/2017	0	6/8/2017	0	6/8/2017	0	6/8/2017	0
6/9/2017	0	6/9/2017	0	6/9/2017	0	6/9/2017	0
6/10/2017	0	6/10/2017	0	6/10/2017	0	6/10/2017	0
6/11/2017	0	6/11/2017	0	6/11/2017	0	6/11/2017	0
6/12/2017	0	6/12/2017	0	6/12/2017	0	6/12/2017	0
6/13/2017	0	6/13/2017	0	6/13/2017	0	6/13/2017	0
6/14/2017	0	6/14/2017	0	6/14/2017	0	6/14/2017	0
6/15/2017	0	6/15/2017	0	6/15/2017	0	6/15/2017	0
6/16/2017	0	6/16/2017	0	6/16/2017	0	6/16/2017	0
6/17/2017	0	6/17/2017	0	6/17/2017	0	6/17/2017	0
6/18/2017	0	6/18/2017	0	6/18/2017	0	6/18/2017	0

6/19/2017	0	6/19/2017	0	6/19/2017	0	6/19/2017	0
6/20/2017	0	6/20/2017	0	6/20/2017	0	6/20/2017	0
6/21/2017	0	6/21/2017	0	6/21/2017	0	6/21/2017	0
6/22/2017	0	6/22/2017	0	6/22/2017	0	6/22/2017	0
6/23/2017	0	6/23/2017	0	6/23/2017	0	6/23/2017	0
6/24/2017	0	6/24/2017	0	6/24/2017	0	6/24/2017	0.38
6/25/2017	0	6/25/2017	0	6/25/2017	0	6/25/2017	0
6/26/2017	0.68	6/26/2017	0.04	6/26/2017	1	6/26/2017	0.79
6/27/2017	0	6/27/2017	1.84	6/27/2017	0.3	6/27/2017	0.15
6/28/2017	0	6/28/2017	0.03	6/28/2017	0	6/28/2017	0
6/29/2017	0	6/29/2017	0	6/29/2017	0	6/29/2017	0
6/30/2017	0	6/30/2017	0	6/30/2017	0	6/30/2017	0
7/1/2017	0	7/1/2017	0	7/1/2017	0	7/1/2017	0.04
7/2/2017	0	7/2/2017	0	7/2/2017	0	7/2/2017	0
7/3/2017	0	7/3/2017	0	7/3/2017	0	7/3/2017	0
7/4/2017	0	7/4/2017	0	7/4/2017	0	7/4/2017	0
7/5/2017	0	7/5/2017	0	7/5/2017	0	7/5/2017	0
7/6/2017	0	7/6/2017	0	7/6/2017	0	7/6/2017	0
7/7/2017	0	7/7/2017	0	7/7/2017	0	7/7/2017	0
7/8/2017	0	7/8/2017	0	7/8/2017	0	7/8/2017	0
7/9/2017	0	7/9/2017	0	7/9/2017	0	7/9/2017	0.29
7/10/2017	0	7/10/2017	0	7/10/2017	0	7/10/2017	0
7/11/2017	0	7/11/2017	0	7/11/2017	0	7/11/2017	0
7/12/2017	0	7/12/2017	0	7/12/2017	0	7/12/2017	0
7/13/2017	0	7/13/2017	0	7/13/2017	0	7/13/2017	0
7/14/2017	0	7/14/2017	0	7/14/2017	0	7/14/2017	0
7/15/2017	0	7/15/2017	0	7/15/2017	0	7/15/2017	0
7/16/2017	0.02	7/16/2017	0	7/16/2017	0.3	7/16/2017	0
7/17/2017	0	7/17/2017	0	7/17/2017	0	7/17/2017	0.04
7/18/2017	0.46	7/18/2017	0	7/18/2017	0.49	7/18/2017	0
7/19/2017	0.19	7/19/2017	0	7/19/2017	0	7/19/2017	0
7/20/2017	0	7/20/2017	0	7/20/2017	0	7/20/2017	0
7/21/2017	0	7/21/2017	0	7/21/2017	0	7/21/2017	0
7/22/2017	0	7/22/2017	0	7/22/2017	0	7/22/2017	0
7/23/2017	0	7/23/2017	0	7/23/2017	0	7/23/2017	0
7/24/2017	0.01	7/24/2017	0	7/24/2017	0.3	7/24/2017	1.26
7/25/2017	0.4	7/25/2017	0	7/25/2017	0	7/25/2017	0
7/26/2017	0	7/26/2017	0	7/26/2017	0.18	7/26/2017	0

7/27/2017	0	7/27/2017	0	7/27/2017	0	7/27/2017	0
7/28/2017	0	7/28/2017	0	7/28/2017	0	7/28/2017	0
7/29/2017	0	7/29/2017	0	7/29/2017	0	7/29/2017	0
7/30/2017	0	7/30/2017	0	7/30/2017	0	7/30/2017	0
7/31/2017	0	7/31/2017	0.06	7/31/2017	0	7/31/2017	0
8/1/2017	0	8/1/2017	0	8/1/2017	0	8/1/2017	0
8/2/2017	0	8/2/2017	0	8/2/2017	0	8/2/2017	0
8/3/2017	0	8/3/2017	0.08	8/3/2017	0.2	8/3/2017	0.08
8/4/2017	0.24	8/4/2017	0	8/4/2017	0	8/4/2017	0.14
8/5/2017	0	8/5/2017	0	8/5/2017	0	8/5/2017	0
8/6/2017	0	8/6/2017	0	8/6/2017	0	8/6/2017	0
8/7/2017	3.3	8/7/2017	0	8/7/2017	2.34	8/7/2017	2.79
8/8/2017	0	8/8/2017	2.26	8/8/2017	0.2	8/8/2017	0.32
8/9/2017	0	8/9/2017	0	8/9/2017	0	8/9/2017	0
8/10/2017	0	8/10/2017	0	8/10/2017	0	8/10/2017	0
8/11/2017	0	8/11/2017	0	8/11/2017	0	8/11/2017	0
8/12/2017	0	8/12/2017	0	8/12/2017	0	8/12/2017	0
8/13/2017	0	8/13/2017	0	8/13/2017	0	8/13/2017	0
8/14/2017	0	8/14/2017	0	8/14/2017	0	8/14/2017	0
8/15/2017	0	8/15/2017	0	8/15/2017	0	8/15/2017	0
8/16/2017	0	8/16/2017	0	8/16/2017	0	8/16/2017	0
8/17/2017	0	8/17/2017	0	8/17/2017	0	8/17/2017	0
8/18/2017	0	8/18/2017	0	8/18/2017	0	8/18/2017	0
8/19/2017	0	8/19/2017	0	8/19/2017	0	8/19/2017	0
8/20/2017	0	8/20/2017	0	8/20/2017	0	8/20/2017	0
8/21/2017	0	8/21/2017	0	8/21/2017	0	8/21/2017	0
8/22/2017	0	8/22/2017	0	8/22/2017	0	8/22/2017	0.24
8/23/2017	0	8/23/2017	0	8/23/2017	0	8/23/2017	0
8/24/2017	0.04	8/24/2017	0	8/24/2017	0.13	8/24/2017	0
8/25/2017	0	8/25/2017	0.02	8/25/2017	0	8/25/2017	0.36
8/26/2017	0.54	8/26/2017	0.51	8/26/2017	0.1	8/26/2017	0.47
8/27/2017	2.43	8/27/2017	3.52	8/27/2017	0.77	8/27/2017	2.73
8/28/2017	0.91	8/28/2017	0.68	8/28/2017	0.19	8/28/2017	0.73
8/29/2017	0.02	8/29/2017	0.01	8/29/2017	0	8/29/2017	0
8/30/2017	0	8/30/2017	0	8/30/2017	0	8/30/2017	0
8/31/2017	0	8/31/2017	0	8/31/2017	0	8/31/2017	0.02
9/1/2017	0	9/1/2017	0	9/1/2017	0	9/1/2017	0
9/2/2017	0	9/2/2017	0	9/2/2017	0	9/2/2017	0

9/3/2017	0	9/3/2017	0	9/3/2017	0	9/3/2017	0
9/4/2017	0	9/4/2017	0	9/4/2017	0	9/4/2017	0
9/5/2017	0	9/5/2017	0	9/5/2017	0	9/5/2017	0.06
9/6/2017	0	9/6/2017	0	9/6/2017	0	9/6/2017	0
9/7/2017	0	9/7/2017	0	9/7/2017	0	9/7/2017	0
9/8/2017	0	9/8/2017	0	9/8/2017	0	9/8/2017	0
9/9/2017	0	9/9/2017	0	9/9/2017	0	9/9/2017	0
9/10/2017	0	9/10/2017	0	9/10/2017	0	9/10/2017	0
9/11/2017	0	9/11/2017	0	9/11/2017	0	9/11/2017	0
9/12/2017	0	9/12/2017	0	9/12/2017	0	9/12/2017	0
9/13/2017	0	9/13/2017	0	9/13/2017	0	9/13/2017	0
9/14/2017	0	9/14/2017	0	9/14/2017	0	9/14/2017	0
9/15/2017	0	9/15/2017	0	9/15/2017	0	9/15/2017	0
9/16/2017	0	9/16/2017	0	9/16/2017	0	9/16/2017	0
9/17/2017	0	9/17/2017	0	9/17/2017	0	9/17/2017	0
9/18/2017	0	9/18/2017	0	9/18/2017	0	9/18/2017	0
9/19/2017	0	9/19/2017	0	9/19/2017	0	9/19/2017	0
9/20/2017	0	9/20/2017	0	9/20/2017	0	9/20/2017	0
9/21/2017	0	9/21/2017	0	9/21/2017	0	9/21/2017	0
9/22/2017	0	9/22/2017	0.02	9/22/2017	0.05	9/22/2017	0
9/23/2017	0	9/23/2017	0	9/23/2017	0	9/23/2017	0
9/24/2017	0	9/24/2017	0	9/24/2017	0	9/24/2017	0
9/25/2017	0.14	9/25/2017	0	9/25/2017	0.04	9/25/2017	0.01
9/26/2017	0	9/26/2017	0.23	9/26/2017	0.51	9/26/2017	0.03
9/27/2017	0	9/27/2017	1.58	9/27/2017	1.51	9/27/2017	1.08
9/28/2017	0	9/28/2017	0.22	9/28/2017	1.1	9/28/2017	0.3
9/29/2017	0.57	9/29/2017	0.37	9/29/2017	0.41	9/29/2017	0.26
9/30/2017	0	9/30/2017	0.03	9/30/2017	0.12	9/30/2017	0.47
10/1/2017	0	10/1/2017	0	10/1/2017	0	10/1/2017	0
10/2/2017	0	10/2/2017	0	10/2/2017	0	10/2/2017	0
10/3/2017	0.71	10/3/2017	0	10/3/2017	0	10/3/2017	0
10/4/2017	0.75	10/4/2017	0.14	10/4/2017	0.11	10/4/2017	0.35
10/5/2017	0.05	10/5/2017	0	10/5/2017	0.01	10/5/2017	0
10/6/2017	0	10/6/2017	0	10/6/2017	0	10/6/2017	0
10/7/2017	0	10/7/2017	0	10/7/2017	0	10/7/2017	0
10/8/2017	0	10/8/2017	0	10/8/2017	0	10/8/2017	0
10/9/2017	0	10/9/2017	0	10/9/2017	0	10/9/2017	0
10/10/2017	0	10/10/2017	0	10/10/2017	0	10/10/2017	0

10/11/2017	0	10/11/2017	0	10/11/2017	0	10/11/2017	0
10/12/2017	0	10/12/2017	0	10/12/2017	0	10/12/2017	0
10/13/2017	0	10/13/2017	0	10/13/2017	0	10/13/2017	0
10/14/2017	0	10/14/2017	0	10/14/2017	0	10/14/2017	0
10/15/2017	0	10/15/2017	0	10/15/2017	0	10/15/2017	0
10/16/2017	0	10/16/2017	0	10/16/2017	0	10/16/2017	0
10/17/2017	0	10/17/2017	0	10/17/2017	0	10/17/2017	0
10/18/2017	0	10/18/2017	0	10/18/2017	0	10/18/2017	0
10/19/2017	0	10/19/2017	0	10/19/2017	0	10/19/2017	0
10/20/2017	0	10/20/2017	0	10/20/2017	0	10/20/2017	0
10/21/2017	0	10/21/2017	0	10/21/2017	0	10/21/2017	0.02
10/22/2017	1.04	10/22/2017	0	10/22/2017	0	10/22/2017	0.28
10/23/2017	0	10/23/2017	0.36	10/23/2017	0.19	10/23/2017	0
10/24/2017	0	10/24/2017	0	10/24/2017	0	10/24/2017	0
10/25/2017	0	10/25/2017	0	10/25/2017	0	10/25/2017	0
10/26/2017	0	10/26/2017	0	10/26/2017	0	10/26/2017	0
10/27/2017	0	10/27/2017	0	10/27/2017	0	10/27/2017	0
10/28/2017	0	10/28/2017	0	10/28/2017	0	10/28/2017	0
10/29/2017	0	10/29/2017	0	10/29/2017	0	10/29/2017	0
10/30/2017	0	10/30/2017	0	10/30/2017	0	10/30/2017	0
10/31/2017	0.29	10/31/2017	0	10/31/2017	0	10/31/2017	0
11/1/2017	0	11/1/2017	0.59	11/1/2017	0.26	11/1/2017	0.09
11/2/2017	0	11/2/2017	0	11/2/2017	0	11/2/2017	0
11/3/2017	0	11/3/2017	0	11/3/2017	0	11/3/2017	0.01
11/4/2017	0	11/4/2017	0.02	11/4/2017	0	11/4/2017	0
11/5/2017	0	11/5/2017	0	11/5/2017	0	11/5/2017	0
11/6/2017	0	11/6/2017	0	11/6/2017	0	11/6/2017	0
11/7/2017	0	11/7/2017	0	11/7/2017	0	11/7/2017	0
11/8/2017	0	11/8/2017	0	11/8/2017	0	11/8/2017	0
11/9/2017	0.17	11/9/2017	0.13	11/9/2017	0.11	11/9/2017	0.18
11/10/2017	0	11/10/2017	0	11/10/2017	0	11/10/2017	0
11/11/2017	0	11/11/2017	0.02	11/11/2017	0	11/11/2017	0.01
11/12/2017	0	11/12/2017	0.09	11/12/2017	0.1	11/12/2017	0
11/13/2017	0.17	11/13/2017	0.29	11/13/2017	0.36	11/13/2017	0.09
11/14/2017	0	11/14/2017	0	11/14/2017	0	11/14/2017	0
11/15/2017	0	11/15/2017	0	11/15/2017	0	11/15/2017	0
11/16/2017	0	11/16/2017	0	11/16/2017	0	11/16/2017	0
11/17/2017	0	11/17/2017	0	11/17/2017	0	11/17/2017	0

11/18/2017	0.02	11/18/2017	0	11/18/2017	0	11/18/2017	0
11/19/2017	0.01	11/19/2017	0	11/19/2017	0	11/19/2017	0
11/20/2017	0	11/20/2017	0	11/20/2017	0	11/20/2017	0
11/21/2017	0	11/21/2017	0	11/21/2017	0	11/21/2017	0
11/22/2017	0	11/22/2017	0	11/22/2017	0	11/22/2017	0
11/23/2017	0	11/23/2017	0	11/23/2017	0	11/23/2017	0
11/24/2017	0	11/24/2017	0	11/24/2017	0	11/24/2017	0
11/25/2017	0	11/25/2017	0	11/25/2017	0	11/25/2017	0
11/26/2017	0	11/26/2017	0	11/26/2017	0	11/26/2017	0
11/27/2017	0	11/27/2017	0	11/27/2017	0	11/27/2017	0
11/28/2017	0	11/28/2017	0	11/28/2017	0	11/28/2017	0
11/29/2017	0	11/29/2017	0	11/29/2017	0	11/29/2017	0
11/30/2017	0.06	11/30/2017	0	11/30/2017	0	11/30/2017	0
12/1/2017	0	12/1/2017	0	12/1/2017	0	12/1/2017	0
12/2/2017	0	12/2/2017	0	12/2/2017	0	12/2/2017	0
12/3/2017	0	12/3/2017	0.01	12/3/2017	0	12/3/2017	0
12/4/2017	0.08	12/4/2017	0.02	12/4/2017	0.14	12/4/2017	0
12/5/2017	0	12/5/2017	0	12/5/2017	0.02	12/5/2017	0.49
12/6/2017	0.66	12/6/2017	0.11	12/6/2017	0.48	12/6/2017	0.69
12/7/2017	1	12/7/2017	1.47	12/7/2017	1.53	12/7/2017	0.64
12/8/2017	0.64	12/8/2017	0.62	12/8/2017	0.23	12/8/2017	0.01
12/9/2017	0	12/9/2017	0	12/9/2017	0	12/9/2017	0
12/10/2017	0	12/10/2017	0	12/10/2017	0	12/10/2017	0
12/11/2017	0	12/11/2017	0	12/11/2017	0	12/11/2017	0
12/12/2017	0	12/12/2017	0	12/12/2017	0	12/12/2017	0
12/13/2017	0	12/13/2017	0	12/13/2017	0	12/13/2017	0
12/14/2017	0	12/14/2017	0	12/14/2017	0	12/14/2017	0
12/15/2017	0	12/15/2017	0.02	12/15/2017	0	12/15/2017	0
12/16/2017	0	12/16/2017	0	12/16/2017	0	12/16/2017	0
12/17/2017	1.22	12/17/2017	1.14	12/17/2017	0.49	12/17/2017	0.53
12/18/2017	0	12/18/2017	0.02	12/18/2017	0	12/18/2017	0
12/19/2017	0.08	12/19/2017	0.46	12/19/2017	0.61	12/19/2017	0.1
12/20/2017	0.31	12/20/2017	0.23	12/20/2017	0.08	12/20/2017	0.12
12/21/2017	0	12/21/2017	0.02	12/21/2017	0	12/21/2017	0
12/22/2017	0.11	12/22/2017	0	12/22/2017	0	12/22/2017	0.04
12/23/2017	0	12/23/2017	0.02	12/23/2017	0.06	12/23/2017	0.05
12/24/2017	0	12/24/2017	0	12/24/2017	0	12/24/2017	0
12/25/2017	0	12/25/2017	0	12/25/2017	0	12/25/2017	0

12/26/2017	0	12/26/2017	0	12/26/2017	0.02	12/26/2017	0
12/27/2017	0	12/27/2017	0.02	12/27/2017	0.03	12/27/2017	0
12/28/2017	0	12/28/2017	0.03	12/28/2017	0	12/28/2017	0
12/29/2017	0	12/29/2017	0.02	12/29/2017	0	12/29/2017	0
12/30/2017	0	12/30/2017	0	12/30/2017	0	12/30/2017	0
12/31/2017	0	12/31/2017	0	12/31/2017	0	12/31/2017	0
1/1/2018	0	1/1/2018	0	1/1/2018	0	1/1/2018	0
1/2/2018	0	1/2/2018	0	1/2/2018	0	1/2/2018	0
1/3/2018	0	1/3/2018	0	1/3/2018	0	1/3/2018	0
1/4/2018	0	1/4/2018	0	1/4/2018	0	1/4/2018	0
1/5/2018	0	1/5/2018	0	1/5/2018	0	1/5/2018	0.02
1/6/2018	0	1/6/2018	0	1/6/2018	0	1/6/2018	0
1/7/2018	0	1/7/2018	0	1/7/2018	0	1/7/2018	0
1/8/2018	0	1/8/2018	0	1/8/2018	0	1/8/2018	0
1/9/2018	0	1/9/2018	0	1/9/2018	0	1/9/2018	0
1/10/2018	0	1/10/2018	0	1/10/2018	0	1/10/2018	0
1/11/2018	0	1/11/2018	0	1/11/2018	0	1/11/2018	0
1/12/2018	0	1/12/2018	0	1/12/2018	0	1/12/2018	0
1/13/2018	0	1/13/2018	0	1/13/2018	0	1/13/2018	0
1/14/2018	0	1/14/2018	0	1/14/2018	0	1/14/2018	0
1/15/2018	0	1/15/2018	0	1/15/2018	0	1/15/2018	0
1/16/2018	0	1/16/2018	0.11	1/16/2018	0.03	1/16/2018	0
1/17/2018	0.2	1/17/2018	0.01	1/17/2018	0	1/17/2018	0
1/18/2018	0	1/18/2018	0	1/18/2018	0	1/18/2018	0
1/19/2018	0	1/19/2018	0	1/19/2018	0.01	1/19/2018	0
1/20/2018	0.02	1/20/2018	0.1	1/20/2018	0.01	1/20/2018	0.02
1/21/2018	0	1/21/2018	0.05	1/21/2018	0.01	1/21/2018	0
1/22/2018	0.06	1/22/2018	0.03	1/22/2018	0.01	1/22/2018	0
1/23/2018	0	1/23/2018	0	1/23/2018	0	1/23/2018	0
1/24/2018	0	1/24/2018	0	1/24/2018	0	1/24/2018	0
1/25/2018	0	1/25/2018	0	1/25/2018	0	1/25/2018	0
1/26/2018	0	1/26/2018	0	1/26/2018	0.05	1/26/2018	0
1/27/2018	0	1/27/2018	0.07	1/27/2018	0.19	1/27/2018	0
1/28/2018	0.02	1/28/2018	0.07	1/28/2018	0	1/28/2018	0
1/29/2018	0	1/29/2018	0	1/29/2018	0	1/29/2018	0
1/30/2018	0	1/30/2018	0	1/30/2018	0	1/30/2018	0
1/31/2018	0	1/31/2018	0	1/31/2018	0	1/31/2018	0
2/1/2018	0	2/1/2018	0	2/1/2018	0	2/1/2018	0

2/2/2018	0	2/2/2018	0	2/2/2018	0	2/2/2018	0
2/3/2018	0	2/3/2018	0.07	2/3/2018	0.05	2/3/2018	0.05
2/4/2018	0.02	2/4/2018	0.02	2/4/2018	0	2/4/2018	0
2/5/2018	0	2/5/2018	0	2/5/2018	0	2/5/2018	0
2/6/2018	0	2/6/2018	0	2/6/2018	0	2/6/2018	0.01
2/7/2018	0.15	2/7/2018	0.08	2/7/2018	0.06	2/7/2018	0.09
2/8/2018	0	2/8/2018	0	2/8/2018	0	2/8/2018	0
2/9/2018	0	2/9/2018	0	2/9/2018	0.03	2/9/2018	0
2/10/2018	0.1	2/10/2018	0.12	2/10/2018	0.03	2/10/2018	0.18
2/11/2018	0	2/11/2018	0.02	2/11/2018	0	2/11/2018	0
2/12/2018	0.05	2/12/2018	0	2/12/2018	0	2/12/2018	0.03
2/13/2018	0	2/13/2018	0.03	2/13/2018	0.06	2/13/2018	0.01
2/14/2018	0	2/14/2018	0.08	2/14/2018	0.04	2/14/2018	0.06
2/15/2018	0	2/15/2018	0.03	2/15/2018	0.03	2/15/2018	0.01
2/16/2018	0	2/16/2018	0.01	2/16/2018	0	2/16/2018	0
2/17/2018	0	2/17/2018	0	2/17/2018	0	2/17/2018	0
2/18/2018	0	2/18/2018	0.02	2/18/2018	0.03	2/18/2018	0
2/19/2018	0.02	2/19/2018	0.01	2/19/2018	0	2/19/2018	0.01
2/20/2018	0	2/20/2018	0	2/20/2018	0.08	2/20/2018	0.01
2/21/2018	0.5	2/21/2018	0.08	2/21/2018	0.62	2/21/2018	0.12
2/22/2018	0.45	2/22/2018	0.18	2/22/2018	1.07	2/22/2018	0.18
2/23/2018	0.55	2/23/2018	1.41	2/23/2018	0.1	2/23/2018	0.23
2/24/2018	0.05	2/24/2018	0.06	2/24/2018	0.27	2/24/2018	0.01
2/25/2018	0.93	2/25/2018	0.03	2/25/2018	0.02	2/25/2018	0.01
2/26/2018	0	2/26/2018	0.02	2/26/2018	0	2/26/2018	0.21
2/27/2018	0.04	2/27/2018	0.03	2/27/2018	0	2/27/2018	0.05
2/28/2018	0.04	2/28/2018	0.02	2/28/2018	0	2/28/2018	0.02
3/1/2018	0.07	3/1/2018	0	3/1/2018	0	3/1/2018	0.02
3/2/2018	0	3/2/2018	0	3/2/2018	0	3/2/2018	0
3/3/2018	0	3/3/2018	0	3/3/2018	0	3/3/2018	0
3/4/2018	0.05	3/4/2018	0.11	3/4/2018	0.2	3/4/2018	0.06
3/5/2018	0.11	3/5/2018	0.01	3/5/2018	0	3/5/2018	0
3/6/2018	0	3/6/2018	0	3/6/2018	0	3/6/2018	0
3/7/2018	0	3/7/2018	0	3/7/2018	0	3/7/2018	0
3/8/2018	0	3/8/2018	0	3/8/2018	0	3/8/2018	0
3/9/2018	0	3/9/2018	0	3/9/2018	0	3/9/2018	0
3/10/2018	0	3/10/2018	0	3/10/2018	0	3/10/2018	0
3/11/2018	0	3/11/2018	0	3/11/2018	0	3/11/2018	0

3/12/2018	0	3/12/2018	0	3/12/2018	0	3/12/2018	0
3/13/2018	0	3/13/2018	0	3/13/2018	0	3/13/2018	0
3/14/2018	0.01	3/14/2018	0	3/14/2018	0	3/14/2018	0
3/15/2018	0	3/15/2018	0	3/15/2018	0	3/15/2018	0
3/16/2018	0	3/16/2018	0.01	3/16/2018	0	3/16/2018	0
3/17/2018	0	3/17/2018	0	3/17/2018	0	3/17/2018	0
3/18/2018	0.2	3/18/2018	0.05	3/18/2018	0	3/18/2018	0.02
3/19/2018	0.11	3/19/2018	0.01	3/19/2018	0	3/19/2018	0
3/20/2018	0	3/20/2018	0	3/20/2018	0	3/20/2018	0
3/21/2018	0	3/21/2018	0	3/21/2018	0	3/21/2018	0
3/22/2018	0	3/22/2018	0	3/22/2018	0	3/22/2018	0
3/23/2018	0	3/23/2018	0	3/23/2018	0	3/23/2018	0
3/24/2018	0	3/24/2018	0	3/24/2018	0	3/24/2018	0
3/25/2018	0	3/25/2018	0	3/25/2018	0	3/25/2018	0
3/26/2018	0	3/26/2018	0.02	3/26/2018	0	3/26/2018	0
3/27/2018	0	3/27/2018	0	3/27/2018	0	3/27/2018	0
3/28/2018	2.14	3/28/2018	1.62	3/28/2018	2.6	3/28/2018	1.42
3/29/2018	0.23	3/29/2018	1.95	3/29/2018	0.42	3/29/2018	0.08
3/30/2018	0	3/30/2018	0	3/30/2018	0	3/30/2018	0
3/31/2018	0	3/31/2018	0	3/31/2018	0	3/31/2018	0
4/1/2018	0	4/1/2018	0	4/1/2018	0	4/1/2018	0
4/2/2018	0	4/2/2018	0	4/2/2018	0	4/2/2018	0
4/3/2018	0	4/3/2018	0	4/3/2018	0	4/3/2018	0
4/4/2018	0	4/4/2018	0	4/4/2018	0	4/4/2018	0.06
4/5/2018	0	4/5/2018	0	4/5/2018	0	4/5/2018	0
4/6/2018	0	4/6/2018	0	4/6/2018	0	4/6/2018	0
4/7/2018	0.42	4/7/2018	0	4/7/2018	0	4/7/2018	0
4/8/2018	0	4/8/2018	0	4/8/2018	0	4/8/2018	0
4/9/2018	0	4/9/2018	0	4/9/2018	0	4/9/2018	0
4/10/2018	0	4/10/2018	0	4/10/2018	0	4/10/2018	0
4/11/2018	0	4/11/2018	0	4/11/2018	0	4/11/2018	0
4/12/2018	0	4/12/2018	0	4/12/2018	0	4/12/2018	0
4/13/2018	0	4/13/2018	0	4/13/2018	0	4/13/2018	0
4/14/2018	0	4/14/2018	0.04	4/14/2018	0.01	4/14/2018	0
4/15/2018	0	4/15/2018	0	4/15/2018	0	4/15/2018	0
4/16/2018	0	4/16/2018	0	4/16/2018	0	4/16/2018	0
4/17/2018	0	4/17/2018	0	4/17/2018	0	4/17/2018	0
4/18/2018	0	4/18/2018	0	4/18/2018	0	4/18/2018	0

4/19/2018	0	4/19/2018	0	4/19/2018	0	4/19/2018	0
4/20/2018	0	4/20/2018	0	4/20/2018	0	4/20/2018	0
4/21/2018	0.02	4/21/2018	0	4/21/2018	0.04	4/21/2018	0
4/22/2018	0	4/22/2018	0.06	4/22/2018	0.04	4/22/2018	0
4/23/2018	0	4/23/2018	0	4/23/2018	0	4/23/2018	0
4/24/2018	0	4/24/2018	0	4/24/2018	0	4/24/2018	0
4/25/2018	0	4/25/2018	0	4/25/2018	0	4/25/2018	0.15
4/26/2018	0.05	4/26/2018	0.41	4/26/2018	0.92	4/26/2018	0
4/27/2018	0	4/27/2018	0	4/27/2018	0	4/27/2018	0
4/28/2018	0	4/28/2018	0	4/28/2018	0	4/28/2018	0
4/29/2018	0	4/29/2018	0	4/29/2018	0	4/29/2018	0
4/30/2018	0	4/30/2018	0	4/30/2018	0	4/30/2018	0
5/1/2018	0	5/1/2018	0	5/1/2018	0.04	5/1/2018	0
5/2/2018	0	5/2/2018	0.02	5/2/2018	0.07	5/2/2018	0.02
5/3/2018	0	5/3/2018	0	5/3/2018	0	5/3/2018	0
5/4/2018	0	5/4/2018	0	5/4/2018	0.12	5/4/2018	2.47
5/5/2018	1.13	5/5/2018	1.46	5/5/2018	2.62	5/5/2018	3.45
5/6/2018	0	5/6/2018	0	5/6/2018	0	5/6/2018	0
5/7/2018	0	5/7/2018	0	5/7/2018	0	5/7/2018	0
5/8/2018	0	5/8/2018	0	5/8/2018	0	5/8/2018	0
5/9/2018	0	5/9/2018	0	5/9/2018	0	5/9/2018	0
5/10/2018	0	5/10/2018	0	5/10/2018	0	5/10/2018	0
5/11/2018	0	5/11/2018	0	5/11/2018	0	5/11/2018	0
5/12/2018	0	5/12/2018	0	5/12/2018	0	5/12/2018	0
5/13/2018	0	5/13/2018	0	5/13/2018	0	5/13/2018	0
5/14/2018	0	5/14/2018	0	5/14/2018	0	5/14/2018	0.01
5/15/2018	0	5/15/2018	0	5/15/2018	0	5/15/2018	0.57
5/16/2018	0	5/16/2018	0.02	5/16/2018	0.65	5/16/2018	0
5/17/2018	0	5/17/2018	0	5/17/2018	0	5/17/2018	0
5/18/2018	0	5/18/2018	0	5/18/2018	0	5/18/2018	0.03
5/19/2018	0	5/19/2018	0	5/19/2018	0	5/19/2018	0
5/20/2018	0	5/20/2018	0	5/20/2018	0.07	5/20/2018	0.39
5/21/2018	0.72	5/21/2018	0.16	5/21/2018	0.16	5/21/2018	0
5/22/2018	0	5/22/2018	0	5/22/2018	0	5/22/2018	0
5/23/2018	0	5/23/2018	0	5/23/2018	0	5/23/2018	0
5/24/2018	0	5/24/2018	0	5/24/2018	0	5/24/2018	0
5/25/2018	0	5/25/2018	0	5/25/2018	0	5/25/2018	0
5/26/2018	0	5/26/2018	0	5/26/2018	0	5/26/2018	0

5/27/2018	0	5/27/2018	0	5/27/2018	0	5/27/2018	0
5/28/2018	0	5/28/2018	0	5/28/2018	0	5/28/2018	0
5/29/2018	0	5/29/2018	0	5/29/2018	0	5/29/2018	0
5/30/2018	0	5/30/2018	0	5/30/2018	0	5/30/2018	0
5/31/2018	0	5/31/2018	0	5/31/2018	0	5/31/2018	0
6/1/2018	0	6/1/2018	0	6/1/2018	0	6/1/2018	0
6/2/2018	0	6/2/2018	0	6/2/2018	0	6/2/2018	0
6/3/2018	0	6/3/2018	0	6/3/2018	0	6/3/2018	0.02
6/4/2018	1.24	6/4/2018	0	6/4/2018	0	6/4/2018	1.86
6/5/2018	0	6/5/2018	0	6/5/2018	0	6/5/2018	0
6/6/2018	0	6/6/2018	0	6/6/2018	0	6/6/2018	0
6/7/2018	0	6/7/2018	0	6/7/2018	0	6/7/2018	0
6/8/2018	0	6/8/2018	0	6/8/2018	0	6/8/2018	0
6/9/2018	0	6/9/2018	0	6/9/2018	0	6/9/2018	0
6/10/2018	0	6/10/2018	0	6/10/2018	0	6/10/2018	0
6/11/2018	0	6/11/2018	0	6/11/2018	0	6/11/2018	0
6/12/2018	0	6/12/2018	0	6/12/2018	0	6/12/2018	0
6/13/2018	0	6/13/2018	0	6/13/2018	0	6/13/2018	0
6/14/2018	0	6/14/2018	0	6/14/2018	0	6/14/2018	0
6/15/2018	0	6/15/2018	0	6/15/2018	0	6/15/2018	0
6/16/2018	0	6/16/2018	0	6/16/2018	0	6/16/2018	0
6/17/2018	0	6/17/2018	0.03	6/17/2018	0.1	6/17/2018	0
6/18/2018	0.1	6/18/2018	0	6/18/2018	0.12	6/18/2018	0
6/19/2018	0	6/19/2018	0	6/19/2018	0.05	6/19/2018	0.02
6/20/2018	0	6/20/2018	0.39	6/20/2018	0.15	6/20/2018	0.01
6/21/2018	0.5	6/21/2018	0.09	6/21/2018	0	6/21/2018	0
6/22/2018	0	6/22/2018	0	6/22/2018	0	6/22/2018	0
6/23/2018	0	6/23/2018	0	6/23/2018	0	6/23/2018	0
6/24/2018	0	6/24/2018	0	6/24/2018	0	6/24/2018	0
6/25/2018	0	6/25/2018	0.07	6/25/2018	0	6/25/2018	0
6/26/2018	0	6/26/2018	0.05	6/26/2018	0	6/26/2018	0.09
6/27/2018	0	6/27/2018	0	6/27/2018	0	6/27/2018	0
6/28/2018	0	6/28/2018	0	6/28/2018	0	6/28/2018	0
6/29/2018	0	6/29/2018	0	6/29/2018	0	6/29/2018	0
6/30/2018	0	6/30/2018	0	6/30/2018	0	6/30/2018	0
7/1/2018	0	7/1/2018	0	7/1/2018	0	7/1/2018	0
7/2/2018	0	7/2/2018	0	7/2/2018	0	7/2/2018	0
7/3/2018	0	7/3/2018	0	7/3/2018	0	7/3/2018	0

7/4/2018	0.37	7/4/2018	0	7/4/2018	0	7/4/2018	0.54
7/5/2018	0	7/5/2018	0.88	7/5/2018	0.35	7/5/2018	0.47
7/6/2018	0.11	7/6/2018	0.1	7/6/2018	0.05	7/6/2018	0.15
7/7/2018	0.16	7/7/2018	0.06	7/7/2018	0.19	7/7/2018	0.01
7/8/2018	0.01	7/8/2018	0.04	7/8/2018	0	7/8/2018	0
7/9/2018	0.15	7/9/2018	0.11	7/9/2018	1.31	7/9/2018	0.05
7/10/2018	0	7/10/2018	0.93	7/10/2018	4.19	7/10/2018	0
7/11/2018	0	7/11/2018	0	7/11/2018	0	7/11/2018	0
7/12/2018	0	7/12/2018	0	7/12/2018	0	7/12/2018	0
7/13/2018	0	7/13/2018	0	7/13/2018	0	7/13/2018	0
7/14/2018	0	7/14/2018	0	7/14/2018	0	7/14/2018	0
7/15/2018	0	7/15/2018	0	7/15/2018	0	7/15/2018	0
7/16/2018	0	7/16/2018	0	7/16/2018	0	7/16/2018	0
7/17/2018	0	7/17/2018	0	7/17/2018	0	7/17/2018	0
7/18/2018	0	7/18/2018	0	7/18/2018	0	7/18/2018	0
7/19/2018	0	7/19/2018	0	7/19/2018	0	7/19/2018	0
7/20/2018	0	7/20/2018	0	7/20/2018	0	7/20/2018	0
7/21/2018	0	7/21/2018	0	7/21/2018	0	7/21/2018	0
7/22/2018	0	7/22/2018	0	7/22/2018	0	7/22/2018	0
7/23/2018	0	7/23/2018	0	7/23/2018	0	7/23/2018	0
7/24/2018	0	7/24/2018	0	7/24/2018	0.01	7/24/2018	0
7/25/2018	0	7/25/2018	0	7/25/2018	0	7/25/2018	0
7/26/2018	0	7/26/2018	0	7/26/2018	0	7/26/2018	0
7/27/2018	0	7/27/2018	0	7/27/2018	0	7/27/2018	0
7/28/2018	0	7/28/2018	0	7/28/2018	0	7/28/2018	0
7/29/2018	0	7/29/2018	0	7/29/2018	0	7/29/2018	0
7/30/2018	0	7/30/2018	0	7/30/2018	0	7/30/2018	0
7/31/2018	0	7/31/2018	0	7/31/2018	0.03	7/31/2018	0.94
8/1/2018	0	8/1/2018	0.18	8/1/2018	0.21	8/1/2018	0
8/2/2018	0	8/2/2018	0	8/2/2018	0	8/2/2018	0
8/3/2018	0	8/3/2018	0	8/3/2018	0	8/3/2018	0
8/4/2018	0	8/4/2018	0	8/4/2018	0	8/4/2018	0
8/5/2018	0	8/5/2018	0	8/5/2018	0	8/5/2018	0
8/6/2018	0	8/6/2018	0	8/6/2018	0	8/6/2018	0
8/7/2018	0	8/7/2018	0	8/7/2018	0	8/7/2018	0
8/8/2018	0	8/8/2018	0	8/8/2018	0	8/8/2018	0
8/9/2018	0	8/9/2018	0	8/9/2018	0	8/9/2018	0.02
8/10/2018	0	8/10/2018	0	8/10/2018	0	8/10/2018	0.11

8/11/2018	0.09	8/11/2018	0.09	8/11/2018	0.7	8/11/2018	0.23
8/12/2018	0.31	8/12/2018	0.14	8/12/2018	0.02	8/12/2018	0.11
8/13/2018	0	8/13/2018	0.45	8/13/2018	0.13	8/13/2018	0.14
8/14/2018	0	8/14/2018	0	8/14/2018	0	8/14/2018	0
8/15/2018	0	8/15/2018	0	8/15/2018	0	8/15/2018	0
8/16/2018	0	8/16/2018	0	8/16/2018	0	8/16/2018	0
8/17/2018	0	8/17/2018	0	8/17/2018	0	8/17/2018	0
8/18/2018	0	8/18/2018	0	8/18/2018	0	8/18/2018	0
8/19/2018	0	8/19/2018	0	8/19/2018	0	8/19/2018	0
8/20/2018	0	8/20/2018	0	8/20/2018	0.02	8/20/2018	0
8/21/2018	1.65	8/21/2018	0	8/21/2018	0	8/21/2018	0
8/22/2018	0	8/22/2018	0	8/22/2018	0	8/22/2018	0
8/23/2018	0	8/23/2018	0	8/23/2018	0	8/23/2018	0
8/24/2018	0	8/24/2018	0	8/24/2018	0	8/24/2018	0
8/25/2018	0	8/25/2018	0	8/25/2018	0	8/25/2018	0
8/26/2018	0	8/26/2018	0	8/26/2018	0	8/26/2018	0
8/27/2018	0	8/27/2018	0	8/27/2018	0	8/27/2018	0
8/28/2018	0	8/28/2018	0	8/28/2018	0	8/28/2018	0
8/29/2018	0	8/29/2018	0	8/29/2018	0	8/29/2018	0
8/30/2018	0	8/30/2018	0	8/30/2018	0	8/30/2018	0
8/31/2018	0	8/31/2018	0	8/31/2018	0	8/31/2018	0
9/1/2018	0	9/1/2018	0	9/1/2018	0	9/1/2018	0
9/2/2018	0	9/2/2018	0	9/2/2018	0	9/2/2018	0.93
9/3/2018	0	9/3/2018	0	9/3/2018	0	9/3/2018	0.03
9/4/2018	0.22	9/4/2018	0.69	9/4/2018	1.87	9/4/2018	1.94
9/5/2018	0.25	9/5/2018	0.22	9/5/2018	0	9/5/2018	0.06
9/6/2018	0.12	9/6/2018	0.02	9/6/2018	0.04	9/6/2018	0
9/7/2018	0.23	9/7/2018	0	9/7/2018	0.52	9/7/2018	0.03
9/8/2018	1.03	9/8/2018	0.02	9/8/2018	2.21	9/8/2018	2.63
9/9/2018	0.97	9/9/2018	1.01	9/9/2018	2.67	9/9/2018	2.95
9/10/2018	0.61	9/10/2018	1.09	9/10/2018	1.48	9/10/2018	0.01
9/11/2018	0.19	9/11/2018	0.42	9/11/2018	0.65	9/11/2018	0.38
9/12/2018	0.04	9/12/2018	0.27	9/12/2018	0.08	9/12/2018	0.65
9/13/2018	0	9/13/2018	0.05	9/13/2018	0.23	9/13/2018	0.02
9/14/2018	0	9/14/2018	0	9/14/2018	0.02	9/14/2018	1.26
9/15/2018	0	9/15/2018	0.54	9/15/2018	0.75	9/15/2018	1.26
9/16/2018	0.46	9/16/2018	1.73	9/16/2018	1.3	9/16/2018	0.04
9/17/2018	0.38	9/17/2018	0.27	9/17/2018	0.47	9/17/2018	0

9/18/2018	0	9/18/2018	0	9/18/2018	0	9/18/2018	0
9/19/2018	0	9/19/2018	0	9/19/2018	0	9/19/2018	0
9/20/2018	0	9/20/2018	0	9/20/2018	0	9/20/2018	0.98
9/21/2018	0.38	9/21/2018	1.43	9/21/2018	0.37	9/21/2018	0.96
9/22/2018	0	9/22/2018	0.73	9/22/2018	3.85	9/22/2018	2.47
9/23/2018	2.85	9/23/2018	0.03	9/23/2018	0	9/23/2018	0.02
9/24/2018	0	9/24/2018	0	9/24/2018	0	9/24/2018	0
9/25/2018	0	9/25/2018	0	9/25/2018	0	9/25/2018	0
9/26/2018	0.11	9/26/2018	0	9/26/2018	0	9/26/2018	0
9/27/2018	0.05	9/27/2018	0.25	9/27/2018	0	9/27/2018	0.27
9/28/2018	0	9/28/2018	0	9/28/2018	0	9/28/2018	0
9/29/2018	0	9/29/2018	0	9/29/2018	0	9/29/2018	0.02
9/30/2018	1	9/30/2018	0.05	9/30/2018	0.74	9/30/2018	0
10/1/2018	0	10/1/2018	0	10/1/2018	0	10/1/2018	0.07
10/2/2018	0.11	10/2/2018	0.15	10/2/2018	0.03	10/2/2018	0.04
10/3/2018	0	10/3/2018	0.01	10/3/2018	0.04	10/3/2018	0
10/4/2018	0	10/4/2018	0	10/4/2018	0	10/4/2018	0
10/5/2018	0	10/5/2018	0	10/5/2018	0	10/5/2018	0
10/6/2018	0	10/6/2018	0	10/6/2018	0.01	10/6/2018	0
10/7/2018	0.09	10/7/2018	0	10/7/2018	0.19	10/7/2018	0.02
10/8/2018	0.53	10/8/2018	0.19	10/8/2018	0.16	10/8/2018	0.16
10/9/2018	0.24	10/9/2018	0.59	10/9/2018	0.97	10/9/2018	0.46
10/10/2018	0.01	10/10/2018	0.47	10/10/2018	0.73	10/10/2018	2.01
10/11/2018	0	10/11/2018	0	10/11/2018	0	10/11/2018	0
10/12/2018	0	10/12/2018	0	10/12/2018	0	10/12/2018	0
10/13/2018	0.13	10/13/2018	0.04	10/13/2018	0.06	10/13/2018	0.18
10/14/2018	0.09	10/14/2018	0.07	10/14/2018	0.02	10/14/2018	0.84
10/15/2018	0.25	10/15/2018	0.12	10/15/2018	0.52	10/15/2018	1.29
10/16/2018	3.77	10/16/2018	1.11	10/16/2018	0.88	10/16/2018	1.62
10/17/2018	0.09	10/17/2018	0.47	10/17/2018	0.12	10/17/2018	0.04
10/18/2018	0.15	10/18/2018	0	10/18/2018	0.09	10/18/2018	0.03
10/19/2018	0.44	10/19/2018	0.27	10/19/2018	0.61	10/19/2018	0.37
10/20/2018	0.45	10/20/2018	0.23	10/20/2018	0.05	10/20/2018	0
10/21/2018	0	10/21/2018	0	10/21/2018	0	10/21/2018	0
10/22/2018	0	10/22/2018	0	10/22/2018	0	10/22/2018	0
10/23/2018	0.1	10/23/2018	0.52	10/23/2018	0.48	10/23/2018	0.12
10/24/2018	0.08	10/24/2018	0.17	10/24/2018	0.26	10/24/2018	0.28
10/25/2018	0.77	10/25/2018	0.76	10/25/2018	0.55	10/25/2018	0.46

10/26/2018	0	10/26/2018	0	10/26/2018	0	10/26/2018	0
10/27/2018	0	10/27/2018	0	10/27/2018	0	10/27/2018	0
10/28/2018	0	10/28/2018	0	10/28/2018	0	10/28/2018	0
10/29/2018	0	10/29/2018	0	10/29/2018	0	10/29/2018	0
10/30/2018	0	10/30/2018	0	10/30/2018	0	10/30/2018	0
10/31/2018	0	10/31/2018	0.02	10/31/2018	0	10/31/2018	0.03
11/1/2018	0.24	11/1/2018	1.37	11/1/2018	0.1	11/1/2018	0.16
11/2/2018	0	11/2/2018	0	11/2/2018	0	11/2/2018	0
11/3/2018	0	11/3/2018	0	11/3/2018	0	11/3/2018	0
11/4/2018	0.28	11/4/2018	1.99	11/4/2018	0	11/4/2018	0
11/5/2018	0	11/5/2018	0	11/5/2018	0	11/5/2018	0
11/6/2018	0	11/6/2018	0	11/6/2018	0	11/6/2018	0
11/7/2018	0	11/7/2018	0.04	11/7/2018	0	11/7/2018	0
11/8/2018	0	11/8/2018	0	11/8/2018	0	11/8/2018	0
11/9/2018	1.15	11/9/2018	0.17	11/9/2018	0.19	11/9/2018	1.26
11/10/2018	0	11/10/2018	0.04	11/10/2018	0	11/10/2018	0
11/11/2018	0	11/11/2018	0.02	11/11/2018	0	11/11/2018	0.13
11/12/2018	0.45	11/12/2018	0.17	11/12/2018	0.3	11/12/2018	0.42
11/13/2018	0	11/13/2018	0.03	11/13/2018	0.03	11/13/2018	0
11/14/2018	0	11/14/2018	0	11/14/2018	0	11/14/2018	0
11/15/2018	0	11/15/2018	0	11/15/2018	0	11/15/2018	0
11/16/2018	0	11/16/2018	0	11/16/2018	0	11/16/2018	0
11/17/2018	0	11/17/2018	0	11/17/2018	0	11/17/2018	0
11/18/2018	0.06	11/18/2018	0.03	11/18/2018	0	11/18/2018	0
11/19/2018	0.04	11/19/2018	0.01	11/19/2018	0	11/19/2018	0
11/20/2018	0	11/20/2018	0	11/20/2018	0	11/20/2018	0.04
11/21/2018	0	11/21/2018	0	11/21/2018	0	11/21/2018	0
11/22/2018	0	11/22/2018	0.22	11/22/2018	0.09	11/22/2018	0
11/23/2018	0.15	11/23/2018	0.03	11/23/2018	0	11/23/2018	0
11/24/2018	0	11/24/2018	0	11/24/2018	0	11/24/2018	0.03
11/25/2018	0	11/25/2018	0	11/25/2018	0	11/25/2018	0
11/26/2018	0.55	11/26/2018	0	11/26/2018	0	11/26/2018	0
11/27/2018	0	11/27/2018	0	11/27/2018	0	11/27/2018	0
11/28/2018	0	11/28/2018	0	11/28/2018	0	11/28/2018	0
11/29/2018	0	11/29/2018	0	11/29/2018	0	11/29/2018	0
11/30/2018	0	11/30/2018	0.03	11/30/2018	0	11/30/2018	0
12/1/2018	0.04	12/1/2018	0	12/1/2018	0.01	12/1/2018	0
12/2/2018	0	12/2/2018	0	12/2/2018	0	12/2/2018	0.04

12/3/2018	0	12/3/2018	0	12/3/2018	0	12/3/2018	0
12/4/2018	0	12/4/2018	0	12/4/2018	0	12/4/2018	0
12/5/2018	0	12/5/2018	0	12/5/2018	0	12/5/2018	0
12/6/2018	0	12/6/2018	0	12/6/2018	0	12/6/2018	0.11
12/7/2018	0.1	12/7/2018	0.61	12/7/2018	0.06	12/7/2018	0
12/8/2018	2.6	12/8/2018	1.66	12/8/2018	1.5	12/8/2018	2.02
12/9/2018	0	12/9/2018	0.02	12/9/2018	0	12/9/2018	0
12/10/2018	0	12/10/2018	0	12/10/2018	0	12/10/2018	0
12/11/2018	0	12/11/2018	0	12/11/2018	0	12/11/2018	0
12/12/2018	0	12/12/2018	0	12/12/2018	0	12/12/2018	0
12/13/2018	0	12/13/2018	0	12/13/2018	0	12/13/2018	0.02
12/14/2018	0	12/14/2018	0	12/14/2018	0	12/14/2018	0
12/15/2018	0	12/15/2018	0	12/15/2018	0	12/15/2018	0
12/16/2018	0	12/16/2018	0	12/16/2018	0	12/16/2018	0
12/17/2018	0	12/17/2018	0	12/17/2018	0	12/17/2018	0
12/18/2018	0	12/18/2018	0	12/18/2018	0	12/18/2018	0
12/19/2018	0.01	12/19/2018	0.05	12/19/2018	0.02	12/19/2018	0.02
12/20/2018	0	12/20/2018	0.02	12/20/2018	0	12/20/2018	0
12/21/2018	0	12/21/2018	0	12/21/2018	0	12/21/2018	0
12/22/2018	0	12/22/2018	0	12/22/2018	0	12/22/2018	0.03
12/23/2018	0	12/23/2018	0	12/23/2018	0	12/23/2018	0
12/24/2018	0	12/24/2018	0	12/24/2018	0	12/24/2018	0
12/25/2018	0	12/25/2018	0	12/25/2018	0	12/25/2018	0
12/26/2018	1.29	12/26/2018	0.06	12/26/2018	0.53	12/26/2018	1.51
12/27/2018	0.11	12/27/2018	0.36	12/27/2018	2.07	12/27/2018	2.9
12/28/2018	0	12/28/2018	0	12/28/2018	0	12/28/2018	0
12/29/2018	0	12/29/2018	0	12/29/2018	0	12/29/2018	0
12/30/2018	0.15	12/30/2018	0.09	12/30/2018	0.03	12/30/2018	0.07
12/31/2018	0.08	12/31/2018	0	12/31/2018	0	12/31/2018	0

Table A3: Rainfall oxygen isotope values collected and run by Tian (San Antonio) and Banner (Austin). San Antonio data is courtesy of Tian, L., and Gao, Y. (2018). Unpublished Hurricane Harvey stable oxygen isotope data, used with permission. University of Texas at San Antonio.

Date	δ18O (‰)	Location
8/26/17 2:00	-5.85	Austin
8/26/17 8:45	-9.73	Austin
8/26/17 12:45	-11.96	Austin
8/26/17 18:20	-10.95	Austin
8/27/17 10:10	-14.73	Austin
8/25/17 18:30	1.76	San Antonio
8/26/17 5:30	-5.58	San Antonio
8/26/17 6:30	-6.71	San Antonio
8/26/17 7:30	-4.95	San Antonio
8/26/17 8:30	-6.67	San Antonio
8/26/17 9:30	-9.80	San Antonio
8/26/17 10:30	-11.63	San Antonio
8/26/17 14:30	-8.48	San Antonio
8/26/17 15:30	-8.18	San Antonio
8/26/17 16:30	-9.25	San Antonio
8/26/17 17:30	-10.48	San Antonio
8/26/17 18:30	-10.16	San Antonio
8/26/17 19:30	-10.56	San Antonio
8/26/17 20:30	-10.09	San Antonio
8/26/17 21:30	-8.48	San Antonio
8/26/17 22:30	-8.45	San Antonio
8/26/17 23:30	-11.15	San Antonio
8/27/17 0:30	-10.74	San Antonio
8/27/17 1:30	-9.84	San Antonio
8/27/17 2:30	-10.70	San Antonio
8/27/17 3:30	-11.14	San Antonio
8/27/17 4:30	-12.04	San Antonio
8/27/17 5:30	-10.87	San Antonio
8/27/17 6:30	-9.55	San Antonio
8/27/17 10:30	-11.57	San Antonio
8/27/17 11:30	-13.94	San Antonio
8/27/17 12:30	-15.14	San Antonio
8/27/17 13:30	-15.68	San Antonio
8/27/17 14:30	-15.74	San Antonio
8/26/17 11:45	-9.56	JGB
8/28/17 0:45	-13.33	JGB

APPENDIX B- METHODS

Table B1: Drip rate, in mL/min, for each of the studied sites across the study period (2010-2018).

Site	Date	Drip Rate
ISST Rear	1/23/10	1.72
ISST Rear	2/26/10	5.16
ISST Rear	3/27/10	3.61
ISST Rear	4/30/10	2.20
ISST Rear	5/30/10	1.72
ISST Rear	6/29/10	1.57
ISST Rear	7/14/10	1.41
ISST Rear	7/15/10	1.45
ISST Rear	7/29/10	2.60
ISST Rear	8/31/10	0.88
ISST Rear	9/26/10	0.90
ISST Rear	11/30/10	0.12
ISST Rear	12/16/10	0.04
ISST Rear	1/29/11	0.07
ISST Rear	2/27/11	0.66
ISST Rear	5/15/11	0.08
ISST Rear	12/11/11	0.31
ISST Rear	4/4/12	4.67
ISST Rear	4/7/12	4.67
ISST Rear	5/15/12	2.80
ISST Rear	6/28/12	1.27
ISST Rear	8/2/12	0.85
ISST Rear	9/9/12	1.05
ISST Rear	10/14/12	0.90
ISST Rear	11/17/12	0.09
ISST Rear	12/17/12	0.81
ISST Rear	1/20/13	1.36
ISST Rear	2/17/13	0.75
ISST Rear	3/17/13	0.63
ISST Rear	4/21/13	1.04
ISST Rear	5/19/13	0.28
ISST Rear	6/23/13	2.30
ISST Rear	7/19/13	1.00
ISST Rear	8/16/13	2.92
ISST Rear	9/29/13	2.69
ISST Rear	10/19/13	4.54
ISST Rear	11/16/13	3.58
ISST Rear	12/16/13	3.33
ISST Rear	1/20/14	2.39
ISST Rear	2/15/14	3.02
ISST Rear	3/29/14	6.04

Site	Date	Drip Rate
ISSR5	9/9/12	17.11
ISSR5	10/14/12	18.85
ISSR5	11/17/12	15.61
ISSR5	12/17/12	13.03
ISSR5	1/20/13	12.58
ISSR5	2/17/13	15.60
ISSR5	3/17/13	11.66
ISSR5	4/21/13	14.22
ISSR5	5/19/13	13.09
ISSR5	6/23/13	12.60
ISSR5	7/19/13	16.39
ISSR5	8/16/13	18.26
ISSR5	9/29/13	18.49
ISSR5	10/19/13	20.87
ISSR5	11/16/13	20.06
ISSR5	12/16/13	21.90
ISSR5	1/20/14	17.40
ISSR5	2/15/14	15.90
ISSR5	3/29/14	14.76
ISSR5	4/27/14	13.81
ISSR5	5/29/14	21.30
ISSR5	6/23/14	18.57
ISSR5	7/22/14	18.39
ISSR5	8/20/14	15.61
ISSR5	9/20/14	20.52
ISSR5	10/31/14	18.31
ISSR5	12/13/14	18.81
ISSR5	1/31/15	24.26
ISSR5	2/21/15	18.72
ISSR5	3/16/15	22.75
ISSR5	4/12/15	18.77
ISSR5	5/10/15	19.39
ISSR5	5/28/15	22.15
ISSR5	6/4/15	20.60
ISSR5	6/11/15	21.40
ISSR5	7/8/15	15.90
ISSR5	8/11/15	8.38
ISSR5	9/12/15	19.76
ISSR5	11/7/15	23.71
ISSR5	2/6/16	17.78
ISSR5	3/12/16	18.02

Site	Date	Drip Rate
NBFE	2/9/14	0.59
NBFE	3/23/14	0.68
NBFE	5/23/14	0.77
NBFE	10/5/14	0.53
NBFE	11/1/14	1.70
NBFE	12/15/14	0.16
NBFE	2/6/15	5.04
NBFE	3/13/15	5.42
NBFE	4/13/15	6.90
NBFE	5/18/15	7.74
NBFE	6/27/15	5.82
NBFE	8/16/15	1.89
NBFE	9/20/15	1.54
NBFE	1/10/16	1.63
NBFE	2/3/16	0.05
NBFE	4/17/16	5.11
NBFE	5/25/16	6.00
NBFE	6/25/16	6.40
NBFE	7/29/16	0.81
NBFE	8/27/16	1.50
NBFE	9/24/16	1.12
NBFE	10/22/16	1.26
NBFE	11/19/16	1.75
NBFE	12/15/16	1.74
NBFE	1/10/17	1.63
NBFE	2/12/17	3.57
NBFE	3/26/17	4.10
NBFE	4/22/17	4.34
NBFE	5/18/17	1.84
NBFE	6/13/17	1.54
NBFE	7/22/17	1.25
NBFE	8/31/17	2.11
NBFE	10/8/17	0.98
NBFE	11/18/17	0.86
NBFE	12/22/17	1.35
NBFE	1/11/18	0.94
NBFE	2/11/18	0.98
NBFE	3/14/18	0.75
NBFE	4/15/18	0.79
NBFE	5/23/18	0.53
NBFE	6/21/18	0.53

ISST Rear	4/27/14	4.78
ISST Rear	5/29/14	6.62
ISST Rear	6/23/14	2.97
ISST Rear	7/22/14	2.11
ISST Rear	8/20/14	0.76
ISST Rear	9/20/14	1.15
ISST Rear	10/31/14	2.55
ISST Rear	12/13/14	3.26
ISST Rear	2/21/15	4.78
ISST Rear	3/16/15	1.91
ISST Rear	4/12/15	0.14
ISST Rear	7/8/15	0.02
ISST Rear	8/11/15	0.04
ISST Rear	9/12/15	0.03
ISST Rear	11/7/15	0.18
ISST Rear	12/10/15	0.01
ISST Rear	2/6/16	0.01
ISST Rear	3/12/16	0.07
ISST Rear	4/9/16	0.16
ISST Rear	6/9/16	0.92
ISST Rear	7/16/16	0.05
ISST Rear	8/11/16	0.05
ISST Rear	9/10/16	0.08
ISST Rear	10/8/16	0.04
ISST Rear	11/6/16	0.26
ISST Rear	1/3/17	0.06
ISST Rear	2/5/17	0.60
ISST Rear	3/5/17	0.17
ISST Rear	4/23/17	1.41
ISST Rear	5/19/17	1.21
ISST Rear	6/22/17	0.71
ISST Rear	7/25/17	0.32
ISST Rear	8/29/17	0.60
ISST Rear	9/6/17	0.43
ISST Rear	9/11/17	0.32
ISST Rear	9/14/17	0.31
ISST Rear	9/23/17	0.61
ISST Rear	10/7/17	0.32
ISST Rear	10/28/17	1.00
ISST Rear	11/19/17	1.46
ISST Rear	12/21/17	0.92
ISST Rear	1/20/18	0.91
ISST Rear	2/24/18	5.90
ISST Rear	3/31/18	1.06
ISST Rear	4/21/18	0.19
ISST Rear	5/24/18	1.43
ISST Rear	6/25/18	0.24
ISST Rear	7/23/18	1.74

ISSR5	4/9/16	15.31
ISSR5	7/16/16	19.76
ISSR5	8/11/16	17.78
ISSR5	10/8/16	5.85
ISSR5	11/6/16	15.46
ISSR5	12/6/16	14.57
ISSR5	1/3/17	12.63
ISSR5	2/5/17	20.73
ISSR5	3/5/17	19.02
ISSR5	4/23/17	14.69
ISSR5	5/19/17	13.57
ISSR5	6/22/17	12.12
ISSR5	7/25/17	12.61
ISSR5	8/29/17	20.20
ISSR5	9/6/17	20.75
ISSR5	9/11/17	20.55
ISSR5	9/14/17	19.59
ISSR5	9/23/17	16.81
ISSR5	10/7/17	20.92
ISSR5	10/28/17	16.97
ISSR5	11/19/17	14.82
ISSR5	12/21/17	15.39
ISSR5	1/20/18	14.60
ISSR5	2/24/18	12.26
ISSR5	3/31/18	15.03
ISSR5	4/21/18	15.28
ISSR5	5/24/18	15.16
ISSR5	6/25/18	13.73
ISSR5	7/23/18	14.57
ISSR5	9/1/18	15.43
ISSR5	11/3/18	20.31
ISSR5	12/12/18	17.22
ISHW	1/23/10	129.00
ISHW	2/26/10	137.78
ISHW	3/27/10	373.80
ISHW	4/30/10	45.60
ISHW	5/30/10	0.00
ISHW	6/29/10	4.86
ISHW	7/14/10	3.83
ISHW	7/15/10	3.70
ISHW	7/29/10	1.54
ISHW	8/31/10	0.00
ISHW	9/26/10	2.52
ISHW	11/4/10	0.00
ISHW	11/30/10	0.00
ISHW	12/16/10	0.00
ISHW	1/29/11	1.02
ISHW	2/27/11	0.00

NBFE	8/3/18	0.72
NBFE	11/10/18	5.30
NBFE	12/1/18	4.41
NBWS	1/24/10	176.40
NBWS	2/21/10	124.80
NBWS	3/21/10	53.52
NBWS	4/16/10	14.40
NBWS	5/13/10	9.60
NBWS	6/17/10	129.60
NBWS	7/23/10	52.30
NBWS	8/28/10	5.40
NBWS	10/23/10	6.30
NBWS	11/21/10	5.69
NBWS	1/17/11	3.83
NBWS	2/20/11	3.65
NBWS	4/10/11	3.60
NBWS	5/1/11	3.12
NBWS	6/27/11	3.53
NBWS	7/31/11	4.20
NBWS	9/10/11	4.48
NBWS	10/5/11	3.82
NBWS	11/5/11	4.94
NBWS	12/18/11	3.94
NBWS	1/11/12	7.02
NBWS	2/12/12	13.15
NBWS	3/4/12	105.22
NBWS	4/15/12	41.87
NBWS	5/23/12	151.38
NBWS	6/22/12	33.93
NBWS	7/18/12	7.58
NBWS	8/17/12	6.54
NBWS	9/16/12	5.33
NBWS	10/20/12	51.07
NBWS	11/18/12	6.00
NBWS	12/13/12	6.14
NBWS	1/17/13	4.75
NBWS	1/18/13	14.30
NBWS	2/26/13	2.67
NBWS	3/21/13	3.75
NBWS	4/14/13	3.36
NBWS	5/9/13	3.17
NBWS	6/19/13	4.18
NBWS	7/12/13	4.88
NBWS	8/12/13	3.98
NBWS	9/15/13	2.88
NBWS	10/27/13	10.51
NBWS	11/23/13	34.80
NBWS	12/17/13	4.89

ISST Rear	9/1/18	1.40
ISST Rear	10/6/18	2.09
ISST Rear	11/3/18	3.15
ISST Rear	12/12/18	5.45
ISLM Rear	1/23/10	0.32
ISLM Rear	2/26/10	0.36
ISLM Rear	3/27/10	0.33
ISLM Rear	4/30/10	0.24
ISLM Rear	5/30/10	0.16
ISLM Rear	6/29/10	0.17
ISLM Rear	7/14/10	0.18
ISLM Rear	7/15/10	0.18
ISLM Rear	7/29/10	0.17
ISLM Rear	8/31/10	0.17
ISLM Rear	9/26/10	0.26
ISLM Rear	11/30/10	0.15
ISLM Rear	12/16/10	0.15
ISLM Rear	2/27/11	0.15
ISLM Rear	5/15/11	0.19
ISLM Rear	7/14/11	0.19
ISLM Rear	9/11/11	0.17
ISLM Rear	10/6/11	0.17
ISLM Rear	11/19/11	0.15
ISLM Rear	12/11/11	0.17
ISLM Rear	1/29/12	0.18
ISLM Rear	3/3/12	0.26
ISLM Rear	4/4/12	0.35
ISLM Rear	4/7/12	0.35
ISLM Rear	6/28/12	0.28
ISLM Rear	8/2/12	0.27
ISLM Rear	9/9/12	0.24
ISLM Rear	10/14/12	0.23
ISLM Rear	11/17/12	0.22
ISLM Rear	12/17/12	0.23
ISLM Rear	1/20/13	0.22
ISLM Rear	2/17/13	0.21
ISLM Rear	3/17/13	0.20
ISLM Rear	4/21/13	0.20
ISLM Rear	5/19/13	0.08
ISLM Rear	6/23/13	0.20
ISLM Rear	7/19/13	0.12
ISLM Rear	8/16/13	0.21
ISLM Rear	9/29/13	0.22
ISLM Rear	10/19/13	0.24
ISLM Rear	11/16/13	0.35
ISLM Rear	12/16/13	0.39
ISLM Rear	1/20/14	0.37
ISLM Rear	2/15/14	0.34
ISHW	3/27/11	0.00
ISHW	5/15/11	0.00
ISHW	7/14/11	0.00
ISHW	9/11/11	0.00
ISHW	10/6/11	0.00
ISHW	11/19/11	0.00
ISHW	12/11/11	0.00
ISHW	1/29/12	0.00
ISHW	4/4/12	27.57
ISHW	4/7/12	27.57
ISHW	5/15/12	15.16
ISHW	8/2/12	0.00
ISHW	9/9/12	0.00
ISHW	10/14/12	0.00
ISHW	12/17/12	0.17
ISHW	1/20/13	0.00
ISHW	2/17/13	4.85
ISHW	3/17/13	0.90
ISHW	4/21/13	2.88
ISHW	5/19/13	0.00
ISHW	6/23/13	0.19
ISHW	7/19/13	0.00
ISHW	8/16/13	1.38
ISHW	9/29/13	0.00
ISHW	10/19/13	0.00
ISHW	11/16/13	6.36
ISHW	12/16/13	68.09
ISHW	1/20/14	38.70
ISHW	2/15/14	9.95
ISHW	3/29/14	0.02
ISHW	4/27/14	0.00
ISHW	5/29/14	279.67
ISHW	6/23/14	5.48
ISHW	7/22/14	10.84
ISHW	8/20/14	11.67
ISHW	9/20/14	0.57
ISHW	10/31/14	0.00
ISHW	12/13/14	0.00
ISHW	1/31/15	15.43
ISHW	2/21/15	0.85
ISHW	3/16/15	204.74
ISHW	4/12/15	50.20
ISHW	5/10/15	25.88
ISHW	5/28/15	26.22
ISHW	6/4/15	342.13
ISHW	6/11/15	107.20
ISHW	7/8/15	173.44
ISHW	8/11/15	9.30
NBWS	1/10/14	9.14
NBWS	2/9/14	3.35
NBWS	3/23/14	3.05
NBWS	5/23/14	15.12
NBWS	10/5/14	2.79
NBWS	11/1/14	3.87
NBWS	12/15/14	
NBWS	2/6/15	116.50
NBWS	3/13/15	79.20
NBWS	4/13/15	140.53
NBWS	5/18/15	40.80
NBWS	6/27/15	8.70
NBWS	8/16/15	9.07
NBWS	9/20/15	6.34
NBWS	10/18/15	4.75
NBWS	12/16/15	52.06
NBWS	1/10/16	15.36
NBWS	2/3/16	11.59
NBWS	3/20/16	4.90
NBWS	4/17/16	9.00
NBWS	5/25/16	90.66
NBWS	6/25/16	126.00
NBWS	7/29/16	6.75
NBWS	8/27/16	125.14
NBWS	9/24/16	20.96
NBWS	10/22/16	60.72
NBWS	11/19/16	22.76
NBWS	12/15/16	145.12
NBWS	1/10/17	15.36
NBWS	2/12/17	52.03
NBWS	3/26/17	79.12
NBWS	4/22/17	28.15
NBWS	5/18/17	11.11
NBWS	6/13/17	4.47
NBWS	7/22/17	5.47
NBWS	8/31/17	263.90
NBWS	10/8/17	11.13
NBWS	11/18/17	3.58
NBWS	12/22/17	6.48
NBWS	1/11/18	3.61
NBWS	2/11/18	4.60
NBWS	3/14/18	4.61
NBWS	4/15/18	107.46
NBWS	5/23/18	4.65
NBWS	6/21/18	4.67
NBWS	8/3/18	4.69
NBWS	11/10/18	254.20
NBWS	12/1/18	92.60

ISLM Rear	3/29/14	0.34	ISHW	9/12/15	0.06	CWNBD	6/16/13	3.58
ISLM Rear	4/27/14	0.33	ISHW	11/7/15	282.60	CWNBD	7/23/13	2.18
ISLM Rear	5/29/14	0.37	ISHW	12/10/15	0.00	CWNBD	8/24/13	0.90
ISLM Rear	6/23/14	0.29	ISHW	12/10/15	151.70	CWNBD	9/14/13	1.45
ISLM Rear	7/22/14	0.23	ISHW	12/10/15	0.00	CWNBD	10/26/13	0.35
ISLM Rear	8/20/14	0.24	ISHW	2/6/16	0.00	CWNBD	11/17/13	0.29
ISLM Rear	9/20/14	0.20	ISHW	3/12/16	201.79	CWNBD	12/20/13	0.90
ISLM Rear	10/31/14	0.22	ISHW	4/9/16	43.96	CWNBD	2/1/14	0.88
ISLM Rear	12/13/14	0.24	ISHW	6/9/16	0.00	CWNBD	5/7/14	0.74
ISLM Rear	1/31/15	0.26	ISHW	7/16/16	16.27	CWNBD	6/19/14	0.87
ISLM Rear	2/21/15	0.26	ISHW	8/11/16	0.00	CWNBD	7/16/14	0.64
ISLM Rear	3/16/15	0.27	ISHW	9/10/16	69.68	CWNBD	8/26/14	0.19
ISLM Rear	4/12/15	0.30	ISHW	10/8/16	13.17	CWNBD	9/28/14	0.33
ISLM Rear	5/10/15	0.28	ISHW	11/6/16	0.00	CWNBD	10/25/14	0.22
ISLM Rear	5/28/15	0.31	ISHW	12/6/16	36.40	CWNBD	12/6/14	0.20
ISLM Rear	6/4/15	0.30	ISHW	1/3/17	175.31	CWNBD	4/4/15	11.70
ISLM Rear	6/11/15	0.30	ISHW	2/5/17	21.77	CWNBD	6/30/15	0.41
ISLM Rear	7/8/15	0.31	ISHW	3/5/17	19.64	CWNBD	8/13/15	0.00
ISLM Rear	8/11/15	0.26	ISHW	4/23/17	15.61	CWNBD	9/19/15	0.03
ISLM Rear	9/12/15	0.20	ISHW	5/19/17	6.14	CWNBD	11/18/15	0.03
ISLM Rear	11/7/15	0.21	ISHW	6/22/17	3.77	CWNBD	12/11/15	0.05
ISLM Rear	12/10/15	0.25	ISHW	7/25/17	0.00	CWNBD	1/18/16	0.12
ISLM Rear	2/6/16	0.21	ISHW	8/29/17	485.29	CWNBD	2/20/16	0.07
ISLM Rear	3/12/16	0.16	ISHW	9/6/17	123.12	CWNBD	3/26/16	0.08
ISLM Rear	4/9/16	0.15	ISHW	9/11/17	61.20	CWNBD	4/23/16	0.51
ISLM Rear	6/9/16	0.15	ISHW	9/14/17	47.45	CWNBD	5/28/16	0.02
ISLM Rear	8/11/16	0.15	ISHW	10/7/17	72.00	CWNBD	6/17/16	1.44
ISLM Rear	9/10/16	0.20	ISHW	10/28/17	41.00	CWNBD	7/26/16	0.87
ISLM Rear	10/8/16	0.18	ISHW	11/19/17	4.12	CWNBD	8/16/16	2.29
ISLM Rear	11/6/16	0.18	ISHW	12/21/17	27.04	CWNBD	9/17/16	0.84
ISLM Rear	12/6/16	0.16	ISHW	1/20/18	29.78	CWNBD	10/29/16	1.11
ISLM Rear	1/3/17	0.19	ISHW	2/24/18	2.89	CWNBD	11/20/16	1.04
ISLM Rear	2/5/17	0.14	ISHW	3/31/18	76.24	CWNBD	12/20/16	0.26
ISLM Rear	3/5/17	0.17	ISHW	4/21/18	50.34	CWNBD	2/11/17	0.48
ISLM Rear	4/23/17	0.20	ISHW	5/24/18		CWNBD	3/11/17	0.35
ISLM Rear	6/22/17	0.18	ISHW	6/25/18	13.43	CWNBD	4/8/17	1.55
ISLM Rear	7/25/17	0.12	ISHW	7/23/18	2.12	CWNBD	5/9/17	1.49
ISLM Rear	8/29/17	0.14	ISHW	9/1/18	0.00	CWNBD	6/9/17	1.31
ISLM Rear	9/11/17	0.17	ISHW	10/6/18	12.53	CWNBD	7/11/17	1.17
ISLM Rear	9/14/17	0.19	ISHW	11/3/18	16.09	CWNBD	8/8/17	1.13
ISLM Rear	9/23/17	0.41	ISHW	12/12/18	18.04	CWNBD	9/17/17	1.07
ISLM Rear	10/7/17	0.22	ISSR7	1/23/10	2.69	CWNBD	10/21/17	1.02
ISLM Rear	10/28/17	0.24	ISSR7	2/25/10	2.70	CWNBD	11/26/17	0.85
ISLM Rear	11/19/17	0.23	ISSR7	3/30/10	2.72	CWNBD	12/20/17	0.80
ISLM Rear	12/21/17	0.21	ISSR7	4/30/10	2.93	CWNBD	1/15/18	0.79
ISLM Rear	1/20/18	0.21	ISSR7	5/30/10	3.03	CWNBD	2/3/18	0.71
ISLM Rear	2/24/18	0.21	ISSR7	6/29/10	3.03	CWNBD	3/3/18	0.24
ISLM Rear	3/31/18	0.22	ISSR7	7/29/10	2.79	CWNBD	4/5/18	1.02

ISLM Rear	4/21/18	0.26
ISLM Rear	5/24/18	0.28
ISLM Rear	6/25/18	0.21
ISLM Rear	7/23/18	0.26
ISLM Rear	9/1/18	0.26
ISLM Rear	11/3/18	0.34
ISLM Rear	12/12/18	0.37
ISSR3	1/23/10	7.18
ISSR3	2/25/10	8.15
ISSR3	3/30/10	9.18
ISSR3	4/30/10	5.05
ISSR3	5/30/10	4.23
ISSR3	6/29/10	10.86
ISSR3	7/29/10	4.95
ISSR3	8/31/10	2.97
ISSR3	9/26/10	6.23
ISSR3	10/28/10	3.96
ISSR3	11/30/10	2.36
ISSR3	12/16/10	1.77
ISSR3	1/29/11	4.88
ISSR3	2/27/11	2.37
ISSR3	3/31/11	2.52
ISSR3	5/15/11	2.43
ISSR3	7/14/11	1.09
ISSR3	9/11/11	0.84
ISSR3	10/6/11	0.71
ISSR3	11/19/11	0.42
ISSR3	12/11/11	9.67
ISSR3	1/29/12	10.61
ISSR3	3/3/12	6.49
ISSR3	4/4/12	11.71
ISSR3	4/7/12	11.71
ISSR3	5/15/12	6.08
ISSR3	6/28/12	4.28
ISSR3	8/2/12	6.73
ISSR3	9/9/12	5.47
ISSR3	10/14/12	6.51
ISSR3	11/17/12	3.09
ISSR3	12/17/12	2.28
ISSR3	1/20/13	
ISSR3	2/17/13	3.03
ISSR3	3/17/13	2.36
ISSR3	4/21/13	4.50
ISSR3	5/19/13	2.07
ISSR3	6/23/13	3.33
ISSR3	7/19/13	1.46
ISSR3	8/16/13	4.12
ISSR3	9/29/13	3.65
ISSR7	8/31/10	2.75
ISSR7	9/26/10	2.64
ISSR7	10/28/10	2.54
ISSR7	11/30/10	2.54
ISSR7	12/16/10	2.33
ISSR7	1/29/11	2.43
ISSR7	2/27/11	2.23
ISSR7	3/31/11	2.33
ISSR7	5/15/11	2.13
ISSR7	7/14/11	2.43
ISSR7	9/11/11	2.43
ISSR7	10/6/11	2.74
ISSR7	11/19/11	
ISSR7	12/11/11	3.27
ISSR7	1/29/12	3.36
ISSR7	3/3/12	2.38
ISSR7	4/4/12	2.81
ISSR7	4/7/12	2.69
ISSR7	5/15/12	
ISSR7	6/28/12	2.46
ISSR7	8/2/12	2.73
ISSR7	9/9/12	2.54
ISSR7	10/14/12	2.54
ISSR7	11/17/12	3.03
ISSR7	12/17/12	2.07
ISSR7	1/20/13	2.68
ISSR7	2/17/13	2.57
ISSR7	3/17/13	2.36
ISSR7	4/21/13	2.89
ISSR7	5/19/13	2.58
ISSR7	6/23/13	2.71
ISSR7	7/19/13	3.15
ISSR7	8/16/13	1.07
ISSR7	9/29/13	2.47
ISSR7	10/19/13	2.25
ISSR7	11/16/13	2.33
ISSR7	12/16/13	2.87
ISSR7	1/20/14	2.23
ISSR7	2/15/14	2.01
ISSR7	3/29/14	1.88
ISSR7	4/27/14	1.83
ISSR7	5/29/14	1.82
ISSR7	6/23/14	1.75
ISSR7	7/22/14	1.67
ISSR7	8/20/14	1.58
ISSR7	9/20/14	1.74
ISSR7	10/31/14	1.50
ISSR7	12/13/14	1.36
CWNBD	5/12/18	0.72
CWNBD	6/11/18	0.60
CWNBD	7/13/18	0.61
CWNBD	8/10/18	0.54
CWNBD	9/29/18	1.70
CWNBD	10/27/18	2.05
CWNBD	11/30/18	1.69
CWNBD	12/22/18	1.61
CWNHoW	8/24/13	0.12
CWNHoW	9/14/13	0.17
CWNHoW	10/26/13	0.14
CWNHoW	11/17/13	0.15
CWNHoW	12/20/13	0.14
CWNHoW	2/1/14	0.15
CWNHoW	5/7/14	0.18
CWNHoW	6/19/14	0.17
CWNHoW	7/16/14	0.17
CWNHoW	8/26/14	0.13
CWNHoW	9/28/14	0.17
CWNHoW	10/25/14	0.16
CWNHoW	12/6/14	0.10
CWNHoW	4/4/15	0.11
CWNHoW	6/30/15	0.16
CWNHoW	8/13/15	0.50
CWNHoW	9/19/15	0.26
CWNHoW	11/8/15	0.20
CWNHoW	12/11/15	0.16
CWNHoW	1/18/16	0.44
CWNHoW	2/20/16	0.15
CWNHoW	3/26/16	0.14
CWNHoW	4/23/16	0.14
CWNHoW	5/28/16	0.18
CWNHoW	6/17/16	0.14
CWNHoW	7/26/16	0.22
CWNHoW	8/16/16	0.14
CWNHoW	9/17/16	0.14
CWNHoW	10/29/16	0.17
CWNHoW	11/20/16	0.13
CWNHoW	12/20/16	0.12
CWNHoW	1/21/17	0.10
CWNHoW	1/21/17	1.52
CWNHoW	2/11/17	0.09
CWNHoW	3/11/17	0.12
CWNHoW	4/8/17	0.12
CWNHoW	5/9/17	0.12
CWNHoW	6/9/17	0.12
CWNHoW	7/11/17	0.12
CWNHoW	8/8/17	0.12

ISSR3	10/19/13	6.36
ISSR3	11/16/13	5.93
ISSR3	12/16/13	5.39
ISSR3	1/20/14	6.43
ISSR3	2/15/14	4.25
ISSR3	3/29/14	3.43
ISSR3	4/27/14	2.42
ISSR3	5/29/14	5.09
ISSR3	6/23/14	5.29
ISSR3	7/22/14	4.22
ISSR3	8/20/14	2.96
ISSR3	9/20/14	4.03
ISSR3	10/31/14	4.02
ISSR3	12/13/14	4.76
ISSR3	1/31/15	
ISSR3	2/21/15	5.25
ISSR3	3/16/15	8.11
ISSR3	4/12/15	5.78
ISSR3	5/10/15	
ISSR3	5/28/15	7.88
ISSR3	6/4/15	7.96
ISSR3	6/11/15	6.15
ISSR3	7/8/15	8.25
ISSR3	8/11/15	4.63
ISSR3	9/12/15	3.45
ISSR3	11/7/15	6.13
ISSR3	12/10/15	6.73
ISSR3	2/6/16	5.20
ISSR3	3/12/16	3.69
ISSR3	4/9/16	3.50
ISSR3	6/9/16	3.77
ISSR3	7/16/16	3.93
ISSR3	8/11/16	2.47
ISSR3	11/6/16	1.99
ISSR3	10/8/16	2.68
ISSR3	12/6/16	2.33
ISSR3	1/3/17	2.04
ISSR3	2/5/17	3.71
ISSR3	3/5/17	4.22
ISSR3	4/23/17	3.09
ISSR3	5/19/17	2.17
ISSR3	6/22/17	1.92
ISSR3	7/25/17	1.92
ISSR3	8/29/17	4.14
ISSR3	9/6/17	5.47
ISSR3	9/11/17	5.32
ISSR3	9/14/17	4.49
ISSR3	9/23/17	4.63

ISSR7	1/31/15	1.41
ISSR7	2/21/15	1.26
ISSR7	3/16/15	1.41
ISSR7	4/12/15	2.37
ISSR7	5/10/15	2.16
ISSR7	5/28/15	3.06
ISSR7	6/4/15	2.88
ISSR7	6/11/15	
ISSR7	7/8/15	2.74
ISSR7	8/11/15	2.24
ISSR7	9/12/15	2.36
ISSR7	11/7/15	1.74
ISSR7	12/10/15	1.71
ISSR7	2/6/16	1.08
ISSR7	3/12/16	1.65
ISSR7	4/9/16	2.13
ISSR7	6/9/16	
ISSR7	7/16/16	2.03
ISSR7	8/11/16	1.68
ISSR7	10/8/16	1.17
ISSR7	11/6/16	1.02
ISSR7	12/6/16	1.14
ISSR7	1/3/17	1.11
ISSR7	2/5/17	0.93
ISSR7	3/5/17	1.07
ISSR7	4/23/17	1.22
ISSR7	5/19/17	1.13
ISSR7	6/22/17	0.93
ISSR7	7/25/17	1.02
ISSR7	8/29/17	0.93
ISSR7	9/23/17	0.96
ISSR7	10/28/17	0.84
ISSR7	11/19/17	0.83
ISSR7	12/21/17	0.85
ISSR7	1/20/18	0.83
ISSR7	2/24/18	0.72
ISSR7	3/31/18	0.69
ISSR7	4/21/18	0.73
ISSR7	5/24/18	0.84
ISSR7	6/25/18	0.81
ISSR7	7/23/18	0.70
ISSR7	7/23/18	0.68
ISSR7	11/3/18	0.78
ISSR7	12/12/18	0.68
NBFE	1/24/10	7.72
NBFE	2/21/10	0.65
NBFE	3/21/10	7.02
NBFE	4/16/10	5.33

CWNHoW	9/17/17	0.11
CWNHoW	10/21/17	0.11
CWNHoW	11/26/17	0.10
CWNHoW	12/20/17	0.10
CWNHoW	1/15/18	0.09
CWNHoW	2/3/18	0.10
CWNHoW	3/3/18	0.09
CWNHoW	4/5/18	0.09
CWNHoW	5/12/18	0.09
CWNHoW	6/11/18	0.09
CWNHoW	7/13/18	0.08
CWNHoW	8/10/18	0.12
CWNHoW	9/29/18	0.09
CWNHoW	10/27/18	0.21
CWNHoW	11/30/18	0.12
CWNHoW	12/22/18	0.11
WC-3	1/21/10	0.06
WC-3	2/20/10	0.07
WC-3	4/27/10	0.08
WC-3	7/7/10	0.10
WC-3	8/26/10	0.10
WC-3	9/28/10	0.08
WC-3	10/24/10	0.16
WC-3	12/15/10	0.16
WC-3	2/24/11	0.18
WC-3	4/15/11	0.08
WC-3	6/7/11	0.07
WC-3	7/31/11	0.17
WC-3	9/1/11	0.09
WC-3	10/6/11	0.11
WC-3	11/13/11	0.13
WC-3	12/15/11	0.14
WC-3	2/6/12	0.13
WC-3	3/8/12	0.00
WC-3	4/12/12	0.11
WC-3	6/2/12	0.07
WC-3	9/21/12	0.26
WC-3	11/2/12	0.14
WC-3	1/24/13	0.00
WC-3	2/25/13	0.15
WC-3	3/26/13	0.16
WC-3	4/23/13	0.21
WC-3	6/11/13	0.11
WC-3	7/26/13	0.11
WC-3	9/6/13	0.14
WC-3	10/25/13	0.11
WC-3	11/22/13	0.13
WC-3	1/17/14	0.11

ISSR3	10/7/17	4.76
ISSR3	10/28/17	3.82
ISSR3	11/19/17	3.63
ISSR3	12/21/17	2.74
ISSR3	1/20/18	3.07
ISSR3	2/24/18	1.72
ISSR3	3/31/18	4.23
ISSR3	4/21/18	4.03
ISSR3	5/24/18	3.87
ISSR3	6/25/18	2.26
ISSR3	7/23/18	3.19
ISSR3	9/1/18	1.45
ISSR3	11/3/18	6.84
ISSR3	12/12/18	6.43
ISSR5	1/23/10	31.53
ISSR5	2/25/10	30.09
ISSR5	3/30/10	30.87
ISSR5	4/30/10	26.16
ISSR5	5/30/10	21.41
ISSR5	6/29/10	21.10
ISSR5	7/29/10	20.62
ISSR5	8/31/10	18.17
ISSR5	9/26/10	26.31
ISSR5	10/28/10	20.31
ISSR5	11/30/10	16.91
ISSR5	12/16/10	17.31
ISSR5	1/29/11	23.31
ISSR5	2/27/11	18.02
ISSR5	3/31/11	14.14
ISSR5	5/15/11	7.43
ISSR5	7/14/11	5.69
ISSR5	9/11/11	4.50
ISSR5	10/6/11	4.19
ISSR5	11/19/11	4.31
ISSR5	12/11/11	27.06
ISSR5	1/29/12	23.39
ISSR5	3/3/12	26.25
ISSR5	4/4/12	22.69
ISSR5	4/7/12	22.61
ISSR5	6/28/12	17.23
ISSR5	8/2/12	18.20

NBFE	5/13/10	1.38
NBFE	6/17/10	4.71
NBFE	7/23/10	3.78
NBFE	8/28/10	1.78
NBFE	10/23/10	0.40
NBFE	11/21/10	1.33
NBFE	1/17/11	0.60
NBFE	2/20/11	0.30
NBFE	4/10/11	0.64
NBFE	5/1/11	0.50
NBFE	6/27/11	0.66
NBFE	7/31/11	1.07
NBFE	9/10/11	0.60
NBFE	10/5/11	0.79
NBFE	11/5/11	0.79
NBFE	12/18/11	0.43
NBFE	1/11/12	0.87
NBFE	2/12/12	5.52
NBFE	4/15/12	4.58
NBFE	5/23/12	6.13
NBFE	6/22/12	2.53
NBFE	7/18/12	4.21
NBFE	8/17/12	0.94
NBFE	9/16/12	0.75
NBFE	10/20/12	2.46
NBFE	11/18/12	1.37
NBFE	12/13/12	1.63
NBFE	1/17/13	0.40
NBFE	1/18/13	1.20
NBFE	2/26/13	0.66
NBFE	3/21/13	0.58
NBFE	4/14/13	0.61
NBFE	5/9/13	0.52
NBFE	6/19/13	1.37
NBFE	7/12/13	0.51
NBFE	8/12/13	1.93
NBFE	9/15/13	0.54
NBFE	10/27/13	0.84
NBFE	11/23/13	3.38
NBFE	12/17/13	0.68
NBFE	1/10/14	0.43

WC-3	2/27/14	0.12
WC-3	5/30/14	0.16
WC-3	6/20/14	0.12
WC-3	7/24/14	0.19
WC-3	9/1/14	0.20
WC-3	10/13/14	0.25
WC-3	12/12/14	0.25
WC-3	2/4/15	0.22
WC-3	3/18/15	0.26
WC-3	4/22/15	0.20
WC-3	6/23/15	0.23
WC-3	7/12/15	0.17
WC-3	8/30/15	0.18
WC-3	10/17/15	0.16
WC-3	1/15/16	0.24
WC-3	3/9/16	0.10
WC-3	5/6/16	0.14
WC-3	6/13/16	0.11
WC-3	7/13/16	0.07
WC-3	8/28/16	0.10
WC-3	10/17/16	0.33
WC-3	12/3/16	0.28
WC-3	1/31/17	0.24
WC-3	2/25/17	0.26
WC-3	4/1/17	0.21
WC-3	5/6/17	0.14
WC-3	5/6/17	0.14
WC-3	6/21/17	10.08
WC-3	8/9/17	4.26
WC-3	9/15/17	0.15
WC-3	10/30/17	0.18
WC-3	12/10/17	0.17
WC-3	1/30/18	0.17
WC-3	3/2/18	0.19
WC-3	4/12/18	0.15
WC-3	5/11/18	0.08
WC-3	7/6/18	0.16
WC-3	9/15/18	0.15
WC-3	10/12/18	
WC-3	11/17/18	0.02
WC-3	12/19/18	0.35

Table B2: Calcite growth rate, in mg/day, for available sites across the study period (2010-2018).

Site	Mid-date	Growth
ISST Rear	1/5/10	8.66
ISST Rear	2/8/10	10.24
ISST Rear	3/12/10	3.18
ISST Rear	4/14/10	
ISST Rear	5/15/10	2.77
ISST Rear	6/14/10	4.65
ISST Rear	7/14/10	-0.12
ISST Rear	8/14/10	-0.24
ISST Rear	9/13/10	-0.34
ISST Rear	10/15/10	8.30
ISST Rear	11/17/10	3.93
ISST Rear	12/8/10	-0.05
ISST Rear	1/7/11	-0.03
ISST Rear	2/12/11	0.60
ISST Rear	3/13/11	0.90
ISST Rear	4/20/11	2.02
ISST Rear	6/14/11	-0.15
ISST Rear	8/12/11	-0.05
ISST Rear	9/25/11	-0.19
ISST Rear	10/29/11	-0.27
ISST Rear	12/4/11	-0.13
ISST Rear	1/4/12	5.45
ISST Rear	2/15/12	12.96
ISST Rear	3/20/12	15.54
ISST Rear	4/26/12	2.81
ISST Rear	6/6/12	5.34
ISST Rear	7/15/12	-0.23
ISST Rear	8/21/12	-4.13
ISST Rear	10/31/12	2.25
ISST Rear	12/2/12	-0.18
ISST Rear	1/3/13	0.08
ISST Rear	3/3/13	1.81
ISST Rear	4/3/13	0.05
ISST Rear	5/6/13	4.20
ISST Rear	6/5/13	1.00
ISST Rear	7/6/13	3.41
ISST Rear	8/2/13	-0.37
ISST Rear	9/7/13	-0.26
ISST Rear	10/9/13	5.49
ISST Rear	11/2/13	8.83
ISST Rear	12/1/13	7.36
ISST Rear	1/2/14	1.59
ISST Rear	2/2/14	3.05

Site	Mid-date	Growth
ISSR3	3/3/13	10.87
ISSR3	4/3/13	11.29
ISSR3	5/6/13	9.59
ISSR3	6/5/13	5.74
ISSR3	7/6/13	9.81
ISSR3	8/2/13	-0.52
ISSR3	9/7/13	-0.28
ISSR3	10/9/13	3.22
ISSR3	11/2/13	6.03
ISSR3	12/1/13	6.66
ISSR3	1/2/14	7.35
ISSR3	2/2/14	8.30
ISSR3	3/8/14	11.68
ISSR3	4/12/14	7.96
ISSR3	5/13/14	9.91
ISSR3	6/10/14	6.99
ISSR3	7/7/14	4.29
ISSR3	8/5/14	-0.30
ISSR3	9/4/14	0.91
ISSR3	10/10/14	5.69
ISSR3	11/21/14	12.16
ISSR3	1/6/15	13.44
ISSR3	2/10/15	6.99
ISSR3	3/4/15	9.34
ISSR3	3/29/15	12.38
ISSR3	4/26/15	15.33
ISSR3	5/26/15	8.53
ISSR3	6/24/15	0.27
ISSR3	7/25/15	0.03
ISSR3	8/27/15	0.07
ISSR3	9/26/15	3.46
ISSR3	10/24/15	12.69
ISSR3	11/23/15	12.24
ISSR3	1/8/16	18.19
ISSR3	2/23/16	
ISSR3	3/26/16	
ISSR3	5/9/16	18.17
ISSR3	6/27/16	4.47
ISSR3	7/29/16	
ISSR3	9/9/16	2.37
ISSR3	10/22/16	16.66
ISSR3	11/21/16	16.78
ISSR3	12/20/16	8.58

Site	Mid-date	Growth
NBWS	9/10/16	3.47
NBWS	10/8/16	15.51
NBWS	11/5/16	18.61
NBWS	12/2/16	22.46
NBWS	12/28/16	22.78
NBWS	1/26/17	0.47
NBWS	3/5/17	35.91
NBWS	4/8/17	20.07
NBWS	5/5/17	27.75
NBWS	5/31/17	27.65
NBWS	7/2/17	14.45
NBWS	8/11/17	11.99
NBWS	9/18/17	3.31
NBWS	10/28/17	25.14
NBWS	12/15/17	31.88
NBWS	1/26/18	36.38
NBWS	2/26/18	39.91
NBWS	3/30/18	20.24
NBWS	5/4/18	16.11
NBWS	6/6/18	8.86
NBWS	7/12/18	4.16
NBWS	8/27/18	-0.57
NBWS	10/5/18	4.00
NBWS	10/30/18	12.92
NBWS	11/20/18	24.00
NBWS	12/26/18	46.38
CWNBD	5/21/13	1.35
CWNBD	7/3/13	-0.08
CWNBD	8/6/13	-0.12
CWNBD	9/3/13	-0.19
CWNBD	10/5/13	1.87
CWNBD	11/6/13	6.21
CWNBD	12/3/13	7.76
CWNBD	1/10/14	21.29
CWNBD	2/14/14	6.07
CWNBD	3/18/14	6.48
CWNBD	4/21/14	4.34
CWNBD	5/23/14	2.06
CWNBD	6/27/14	-0.20
CWNBD	8/5/14	-0.09
CWNBD	9/11/14	-0.26
CWNBD	2/3/15	5.19
CWNBD	5/17/15	2.52

ISST Rear	3/8/14	4.09
ISST Rear	4/12/14	4.88
ISST Rear	5/13/14	
ISST Rear	6/10/14	6.58
ISST Rear	7/7/14	2.72
ISST Rear	8/5/14	0.52
ISST Rear	9/4/14	0.22
ISST Rear	10/10/14	8.54
ISST Rear	11/21/14	
ISST Rear	1/6/15	14.57
ISST Rear	2/10/15	6.48
ISST Rear	3/4/15	8.46
ISST Rear	3/29/15	3.60
ISST Rear	4/26/15	1.56
ISST Rear	5/26/15	3.48
ISST Rear	6/24/15	3.76
ISST Rear	7/25/15	0.06
ISST Rear	8/27/15	
ISST Rear	9/26/15	0.94
ISST Rear	10/24/15	
ISST Rear	11/23/15	12.82
ISST Rear	1/8/16	1.10
ISST Rear	2/23/16	2.00
ISST Rear	3/26/16	0.10
ISST Rear	5/9/16	3.83
ISST Rear	6/27/16	-0.15
ISST Rear	7/29/16	-0.19
ISST Rear	8/26/16	-0.23
ISST Rear	9/24/16	0.30
ISST Rear	10/22/16	-0.62
ISST Rear	11/21/16	
ISST Rear	12/20/16	0.90
ISST Rear	1/19/17	3.08
ISST Rear	2/19/17	0.81
ISST Rear	3/29/17	6.72
ISST Rear	5/6/17	3.99
ISST Rear	6/5/17	8.95
ISST Rear	7/8/17	0.82
ISST Rear	8/11/17	-0.23
ISST Rear	9/10/17	-0.30
ISST Rear	10/10/17	0.05
ISST Rear	11/8/17	5.38
ISST Rear	12/5/17	6.59
ISST Rear	1/5/18	3.59
ISST Rear	2/6/18	2.43
ISST Rear	3/13/18	1.48
ISST Rear	4/11/18	-0.08
ISST Rear	5/8/18	2.45

ISSR3	1/19/17	18.91
ISSR3	2/19/17	18.79
ISSR3	3/29/17	18.65
ISSR3	5/6/17	16.43
ISSR3	6/5/17	14.73
ISSR3	7/8/17	8.08
ISSR3	8/11/17	-0.25
ISSR3	9/10/17	4.19
ISSR3	10/10/17	3.88
ISSR3	11/8/17	8.44
ISSR3	12/5/17	8.38
ISSR3	1/5/18	8.73
ISSR3	2/6/18	6.44
ISSR3	3/13/18	8.94
ISSR3	4/11/18	6.19
ISSR3	5/8/18	6.14
ISSR3	6/9/18	3.62
ISSR3	7/9/18	3.16
ISSR3	8/12/18	0.35
ISSR3	9/18/18	0.85
ISSR3	10/20/18	12.12
ISSR3	11/22/18	8.30
ISSR7	1/4/10	2.21
ISSR7	2/7/10	3.96
ISSR7	3/13/10	1.69
ISSR7	4/14/10	4.11
ISSR7	5/15/10	2.28
ISSR7	6/14/10	0.07
ISSR7	7/14/10	-0.45
ISSR7	8/14/10	-0.13
ISSR7	9/13/10	-0.32
ISSR7	10/12/10	0.57
ISSR7	11/13/10	2.67
ISSR7	12/8/10	2.60
ISSR7	1/7/11	2.78
ISSR7	2/12/11	3.00
ISSR7	3/15/11	3.26
ISSR7	4/20/11	3.05
ISSR7	6/14/11	-0.16
ISSR7	8/12/11	-0.12
ISSR7	9/25/11	-0.56
ISSR7	12/4/11	1.66
ISSR7	3/20/12	2.63
ISSR7	4/26/12	0.73
ISSR7	6/6/12	0.26
ISSR7	10/31/12	2.03
ISSR7	12/2/12	2.41
ISSR7	1/3/13	0.96

CWNBD	7/22/15	-0.26
CWNBD	8/26/15	0.07
CWNBD	10/9/15	-0.02
CWNBD	11/24/15	0.10
CWNBD	12/30/15	1.26
CWNBD	2/3/16	4.24
CWNBD	3/8/16	1.82
CWNBD	4/9/16	4.57
CWNBD	5/10/16	4.58
CWNBD	6/7/16	0.03
CWNBD	7/6/16	-0.15
CWNBD	8/5/16	-0.33
CWNBD	9/1/16	-0.15
CWNBD	10/8/16	0.25
CWNBD	11/9/16	1.39
CWNBD	12/5/16	1.97
CWNBD	1/5/17	3.99
CWNBD	1/31/17	2.20
CWNBD	2/25/17	3.58
CWNBD	3/25/17	6.38
CWNBD	4/23/17	1.01
CWNBD	5/24/17	0.08
CWNBD	6/25/17	-0.21
CWNBD	7/23/17	-0.22
CWNBD	8/26/17	-0.09
CWNBD	10/4/17	0.06
CWNBD	11/8/17	8.95
CWNBD	12/21/17	3.19
CWNBD	1/24/18	3.15
CWNBD	2/17/18	7.94
CWNBD	3/19/18	9.58
CWNBD	4/23/18	8.35
CWNBD	5/27/18	-0.04
CWNBD	6/27/18	0.01
CWNBD	7/27/18	0.00
CWNBD	9/4/18	-0.34
CWNBD	10/13/18	2.75
CWNBD	11/13/18	16.15
CWNBD	12/11/18	-10.24
CWNHoW	5/21/13	-0.10
CWNHoW	7/3/13	-0.14
CWNHoW	8/6/13	-0.18
CWNHoW	9/3/13	-0.33
CWNHoW	10/5/13	-0.28
CWNHoW	11/6/13	-0.67
CWNHoW	12/3/13	-0.27
CWNHoW	1/10/14	-0.14
CWNHoW	2/14/14	-0.18

ISST Rear	6/9/18	1.20
ISST Rear	7/9/18	
ISST Rear	8/12/18	-0.45
ISST Rear	9/18/18	-0.45
ISST Rear	10/20/18	6.93
ISST Rear	11/22/18	13.80
ISLM Rear	1/4/10	8.56
ISLM Rear	3/12/10	6.01
ISLM Rear	4/13/10	7.44
ISLM Rear	5/15/10	5.12
ISLM Rear	6/14/10	
ISLM Rear	7/14/10	-0.19
ISLM Rear	8/14/10	
ISLM Rear	9/13/10	-0.43
ISLM Rear	10/15/10	-0.40
ISLM Rear	11/17/10	3.63
ISLM Rear	12/8/10	2.35
ISLM Rear	1/7/11	6.29
ISLM Rear	2/12/11	6.12
ISLM Rear	4/20/11	8.27
ISLM Rear	6/14/11	1.60
ISLM Rear	8/12/11	-0.05
ISLM Rear	9/25/11	0.86
ISLM Rear	10/29/11	1.99
ISLM Rear	12/4/11	5.09
ISLM Rear	1/4/12	7.22
ISLM Rear	2/15/12	6.00
ISLM Rear	3/20/12	7.03
ISLM Rear	4/26/12	2.59
ISLM Rear	6/6/12	3.27
ISLM Rear	7/15/12	-0.12
ISLM Rear	9/26/12	-0.18
ISLM Rear	10/31/12	9.48
ISLM Rear	12/2/12	3.35
ISLM Rear	1/3/13	5.13
ISLM Rear	3/3/13	3.79
ISLM Rear	4/3/13	3.98
ISLM Rear	5/6/13	2.61
ISLM Rear	6/5/13	1.63
ISLM Rear	7/6/13	2.91
ISLM Rear	8/2/13	1.05
ISLM Rear	9/7/13	
ISLM Rear	10/9/13	-0.30
ISLM Rear	11/2/13	-0.21
ISLM Rear	12/1/13	0.85
ISLM Rear	1/2/14	5.96
ISLM Rear	2/2/14	3.12
ISLM Rear	3/8/14	5.05
ISSR7	2/3/13	0.49
ISSR7	3/3/13	0.30
ISSR7	4/3/13	0.48
ISSR7	5/6/13	0.39
ISSR7	6/5/13	-0.05
ISSR7	7/6/13	-0.31
ISSR7	8/2/13	-0.30
ISSR7	9/7/13	-0.35
ISSR7	10/9/13	-0.40
ISSR7	11/2/13	0.45
ISSR7	12/1/13	0.79
ISSR7	1/2/14	2.01
ISSR7	2/2/14	0.94
ISSR7	3/8/14	0.87
ISSR7	4/12/14	0.11
ISSR7	5/13/14	-0.54
ISSR7	6/10/14	-0.39
ISSR7	7/7/14	-0.31
ISSR7	8/5/14	-0.37
ISSR7	9/4/14	-0.22
ISSR7	10/10/14	-0.52
ISSR7	11/21/14	1.06
ISSR7	1/6/15	2.33
ISSR7	2/10/15	1.92
ISSR7	3/4/15	1.14
ISSR7	3/29/15	1.50
ISSR7	4/26/15	1.02
ISSR7	5/26/15	3.48
ISSR7	6/24/15	-0.24
ISSR7	7/25/15	0.04
ISSR7	8/27/15	-0.24
ISSR7	9/26/15	-0.12
ISSR7	10/24/15	0.11
ISSR7	11/23/15	3.91
ISSR7	1/8/16	2.75
ISSR7	3/8/16	0.56
ISSR7	5/9/16	2.02
ISSR7	6/27/16	-0.10
ISSR7	7/29/16	-0.36
ISSR7	9/9/16	0.09
ISSR7	10/22/16	2.20
ISSR7	11/21/16	1.23
ISSR7	12/20/16	1.15
ISSR7	1/19/17	-0.01
ISSR7	2/19/17	-0.32
ISSR7	3/29/17	1.25
ISSR7	5/6/17	0.40
ISSR7	6/5/17	0.33
CWNHoW	3/18/14	-0.14
CWNHoW	4/21/14	0.15
CWNHoW	5/23/14	-0.71
CWNHoW	6/27/14	-0.23
CWNHoW	8/5/14	-0.16
CWNHoW	9/11/14	-0.32
CWNHoW	2/3/15	-0.16
CWNHoW	5/17/15	-0.34
CWNHoW	7/22/15	-0.32
CWNHoW	8/31/15	-0.36
CWNHoW	10/14/15	-0.28
CWNHoW	11/24/15	-0.51
CWNHoW	12/30/15	-0.42
CWNHoW	2/3/16	-0.01
CWNHoW	3/8/16	0.16
CWNHoW	4/9/16	0.00
CWNHoW	5/10/16	-0.66
CWNHoW	6/7/16	-0.46
CWNHoW	7/6/16	-0.19
CWNHoW	8/5/16	
CWNHoW	9/1/16	
CWNHoW	10/8/16	-0.26
CWNHoW	11/9/16	
CWNHoW	12/5/16	-0.63
CWNHoW	1/5/17	-1.16
CWNHoW	1/31/17	-0.70
CWNHoW	2/25/17	-0.41
CWNHoW	3/25/17	-0.05
CWNHoW	4/23/17	-0.41
CWNHoW	5/24/17	-0.38
CWNHoW	6/25/17	-0.33
CWNHoW	7/23/17	-0.35
CWNHoW	8/26/17	-0.19
CWNHoW	10/4/17	-0.21
CWNHoW	11/8/17	-0.27
CWNHoW	12/21/17	-0.05
CWNHoW	1/24/18	-0.18
CWNHoW	2/17/18	-0.22
CWNHoW	3/19/18	-0.12
CWNHoW	4/23/18	-0.32
CWNHoW	5/27/18	-0.59
CWNHoW	6/27/18	
CWNHoW	7/27/18	-0.34
CWNHoW	9/4/18	-0.41
CWNHoW	10/13/18	-0.14
CWNHoW	11/13/18	-0.22
CWNHoW	12/11/18	-0.49
WC-3	2/5/10	7.34

ISLM Rear	4/12/14	3.96
ISLM Rear	5/13/14	3.66
ISLM Rear	6/10/14	-0.03
ISLM Rear	7/7/14	-0.18
ISLM Rear	8/5/14	-0.32
ISLM Rear	9/4/14	-0.20
ISLM Rear	10/10/14	-0.17
ISLM Rear	11/21/14	1.82
ISLM Rear	1/6/15	7.00
ISLM Rear	2/10/15	6.77
ISLM Rear	3/4/15	5.81
ISLM Rear	3/29/15	3.64
ISLM Rear	4/26/15	5.38
ISLM Rear	5/26/15	
ISLM Rear	6/24/15	-0.05
ISLM Rear	7/25/15	0.11
ISLM Rear	8/27/15	-0.27
ISLM Rear	9/26/15	
ISLM Rear	10/24/15	-0.25
ISLM Rear	11/23/15	-0.13
ISLM Rear	1/13/16	4.24
ISLM Rear	2/28/16	10.24
ISLM Rear	3/31/16	4.13
ISLM Rear	5/14/16	5.32
ISLM Rear	6/27/16	1.24
ISLM Rear	7/29/16	-1.51
ISLM Rear	8/26/16	
ISLM Rear	9/24/16	-0.31
ISLM Rear	10/22/16	
ISLM Rear	11/21/16	0.30
ISLM Rear	12/20/16	4.70
ISLM Rear	1/19/17	4.87
ISLM Rear	2/19/17	5.97
ISLM Rear	3/29/17	5.39
ISLM Rear	5/6/17	6.20
ISLM Rear	6/5/17	3.18
ISLM Rear	7/8/17	0.66
ISLM Rear	8/11/17	-0.17
ISLM Rear	9/10/17	-0.32
ISLM Rear	10/10/17	-0.17
ISLM Rear	11/8/17	-0.19
ISLM Rear	12/5/17	0.52
ISLM Rear	1/5/18	0.58
ISLM Rear	2/6/18	7.78
ISLM Rear	3/13/18	4.38
ISLM Rear	4/11/18	3.77
ISLM Rear	5/8/18	2.35
ISLM Rear	6/9/18	1.97
ISSR7	7/8/17	-0.26
ISSR7	8/11/17	-0.28
ISSR7	9/10/17	-0.30
ISSR7	10/10/17	-0.11
ISSR7	11/8/17	0.19
ISSR7	12/5/17	1.05
ISSR7	1/5/18	0.63
ISSR7	2/6/18	1.11
ISSR7	3/13/18	0.27
ISSR7	4/11/18	0.63
ISSR7	5/8/18	0.09
ISSR7	6/9/18	-0.26
ISSR7	7/9/18	-0.50
ISSR7	8/12/18	-0.32
ISSR7	9/18/18	-0.97
ISSR7	10/20/18	1.01
ISSR7	11/22/18	1.73
NBWS	1/2/10	28.84
NBWS	4/3/10	25.43
NBWS	7/5/10	28.06
NBWS	7/23/10	2.22
NBWS	9/25/10	13.48
NBWS	11/6/10	21.53
NBWS	12/19/10	11.27
NBWS	2/3/11	25.12
NBWS	3/16/11	24.06
NBWS	4/20/11	18.43
NBWS	5/29/11	28.76
NBWS	7/14/11	14.95
NBWS	8/20/11	1.48
NBWS	9/22/11	-0.50
NBWS	10/20/11	3.43
NBWS	11/26/11	9.58
NBWS	12/30/11	29.27
NBWS	1/27/12	8.64
NBWS	2/22/12	4.67
NBWS	5/4/12	39.71
NBWS	6/7/12	-0.69
NBWS	8/2/12	8.99
NBWS	11/3/12	19.71
NBWS	11/29/12	19.25
NBWS	12/30/12	31.01
NBWS	2/5/13	24.00
NBWS	3/8/13	21.68
NBWS	4/2/13	21.64
NBWS	4/26/13	19.24
NBWS	5/29/13	8.89
NBWS	6/30/13	6.24
WC-3	3/10/10	8.29
WC-3	4/12/10	9.37
WC-3	5/14/10	10.11
WC-3	6/18/10	11.19
WC-3	7/17/10	14.21
WC-3	8/11/10	19.03
WC-3	9/11/10	18.61
WC-3	10/11/10	14.69
WC-3	11/5/10	11.04
WC-3	12/1/10	10.46
WC-3	1/5/11	6.42
WC-3	2/10/11	5.27
WC-3	3/21/11	16.35
WC-3	5/11/11	13.41
WC-3	7/6/11	23.08
WC-3	8/18/11	18.76
WC-3	9/18/11	13.25
WC-3	10/25/11	11.13
WC-3	11/29/11	7.44
WC-3	1/10/12	9.60
WC-3	2/21/12	9.48
WC-3	3/25/12	0.00
WC-3	5/7/12	22.58
WC-3	6/25/12	18.66
WC-3	8/20/12	37.81
WC-3	10/12/12	43.30
WC-3	12/13/12	15.81
WC-3	2/9/13	10.31
WC-3	3/11/13	11.73
WC-3	4/9/13	17.60
WC-3	5/17/13	18.60
WC-3	7/3/13	12.07
WC-3	8/16/13	18.03
WC-3	9/30/13	20.77
WC-3	11/8/13	14.31
WC-3	12/20/13	6.87
WC-3	2/6/14	5.71
WC-3	3/20/14	8.64
WC-3	5/5/14	
WC-3	6/9/14	8.38
WC-3	7/7/14	12.80
WC-3	8/12/14	23.37
WC-3	9/22/14	8.25
WC-3	11/12/14	14.86
WC-3	1/8/15	7.69
WC-3	2/25/15	8.70
WC-3	4/4/15	11.38
WC-3	5/23/15	12.95

ISLM Rear	7/9/18	0.50
ISLM Rear	8/12/18	-0.31
ISLM Rear	9/18/18	-0.13
ISLM Rear	10/20/18	-0.19
ISLM Rear	11/22/18	-0.09
ISSR3	1/5/10	6.00
ISSR3	2/7/10	8.59
ISSR3	3/14/10	5.54
ISSR3	4/14/10	8.89
ISSR3	5/15/10	4.96
ISSR3	6/14/10	5.40
ISSR3	7/14/10	0.40
ISSR3	8/14/10	-0.34
ISSR3	10/12/10	8.10
ISSR3	11/13/10	7.08
ISSR3	12/8/10	5.60
ISSR3	1/7/11	10.57
ISSR3	2/12/11	6.17
ISSR3	3/15/11	4.71
ISSR3	4/22/11	3.67
ISSR3	6/14/11	0.08
ISSR3	8/12/11	-0.10
ISSR3	9/25/11	-0.07
ISSR3	10/29/11	2.41
ISSR3	12/4/11	4.62
ISSR3	3/20/12	7.39
ISSR3	4/26/12	5.66
ISSR3	6/6/12	5.35
ISSR3	10/31/12	7.47
ISSR3	12/2/12	7.50
ISSR3	1/3/13	8.73

NBWS	7/27/13	6.08
NBWS	8/29/13	8.36
NBWS	10/6/13	14.65
NBWS	11/10/13	3.79
NBWS	12/5/13	24.56
NBWS	12/29/13	24.64
NBWS	1/25/14	24.84
NBWS	3/2/14	26.28
NBWS	4/22/14	26.75
NBWS	6/5/14	2.81
NBWS	7/3/14	6.23
NBWS	8/4/14	5.73
NBWS	9/12/14	16.36
NBWS	10/18/14	22.60
NBWS	11/23/14	36.83
NBWS	1/10/15	24.56
NBWS	2/23/15	16.29
NBWS	3/28/15	
NBWS	4/30/15	23.92
NBWS	6/7/15	26.04
NBWS	10/4/15	18.76
NBWS	11/16/15	
NBWS	1/9/16	18.15
NBWS	1/21/16	1.01
NBWS	2/26/16	1.12
NBWS	3/3/16	-1.16
NBWS	4/3/16	11.31
NBWS	5/6/16	24.38
NBWS	6/9/16	34.42
NBWS	7/12/16	6.63
NBWS	8/12/16	11.24

WC-3	7/2/15	18.47
WC-3	8/5/15	12.61
WC-3	9/23/15	18.65
WC-3	12/1/15	11.92
WC-3	2/11/16	8.15
WC-3	4/7/16	10.27
WC-3	5/25/16	14.99
WC-3	6/28/16	12.55
WC-3	8/5/16	16.93
WC-3	9/22/16	19.31
WC-3	11/9/16	27.47
WC-3	1/4/17	17.83
WC-3	2/13/17	14.43
WC-3	3/14/17	18.02
WC-3	4/18/17	36.17
WC-3	5/29/17	27.80
WC-3	7/15/17	43.84
WC-3	8/27/17	45.32
WC-3	10/7/17	26.63
WC-3	11/19/17	16.34
WC-3	1/4/18	7.16
WC-3	2/14/18	9.14
WC-3	3/22/18	6.89
WC-3	4/26/18	
WC-3	6/8/18	15.82
WC-3	8/10/18	15.89
WC-3	9/28/18	23.74
WC-3	10/30/18	15.50
WC-3	12/3/18	13.55

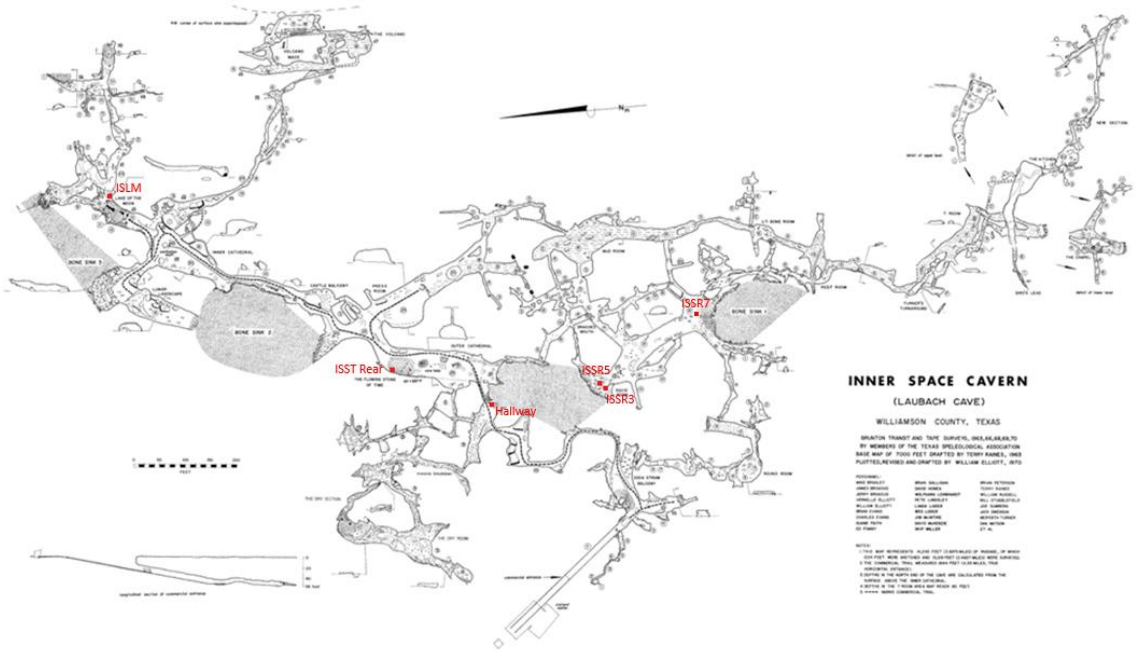

Fig. B1: Map of Inner Space Cavern with studied sites marked. Figure modified from the Texas Speleological Survey.

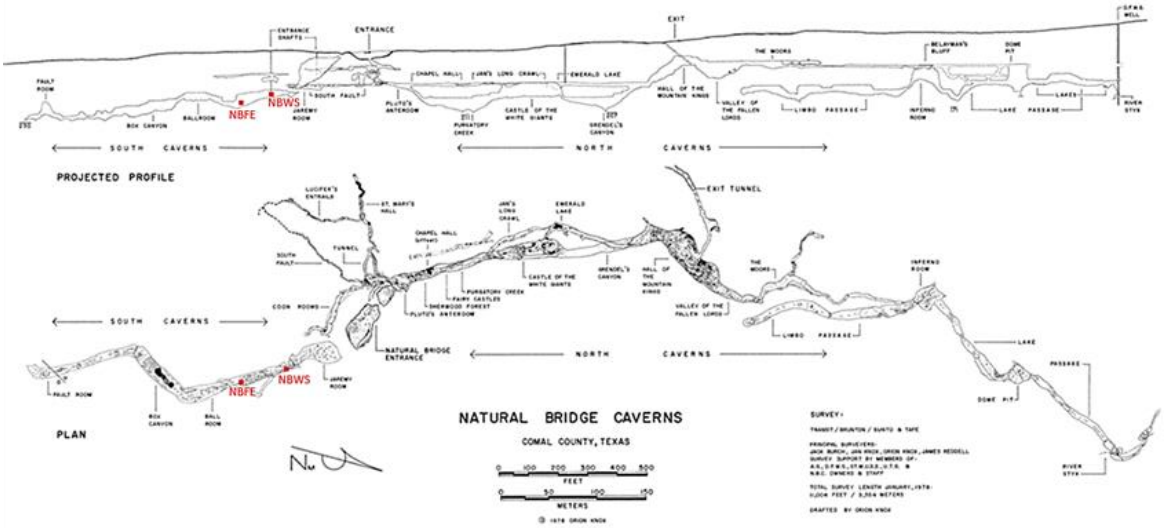

Fig. B2: Map of Natural Bridge Caverns with studied sites marked. Figure modified from the Texas Speleological Survey.

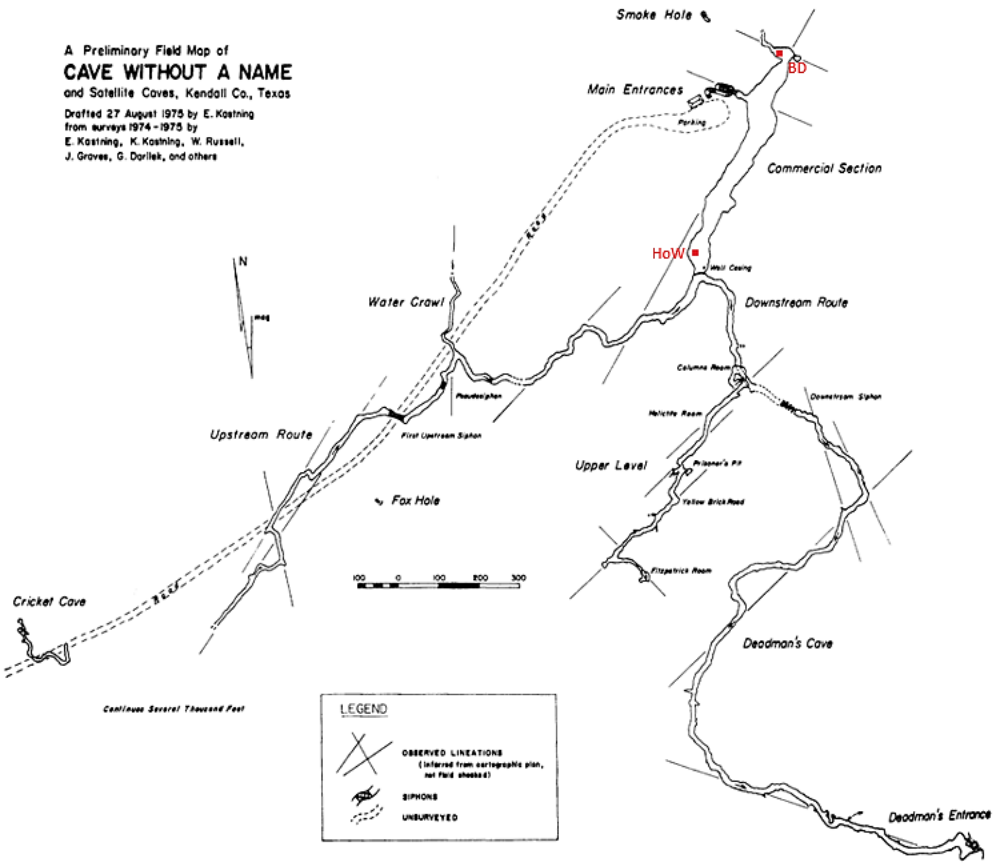

Fig. B3: Map of Cave without a Name with studied sites marked. Figure modified from the Texas Speleological Survey.

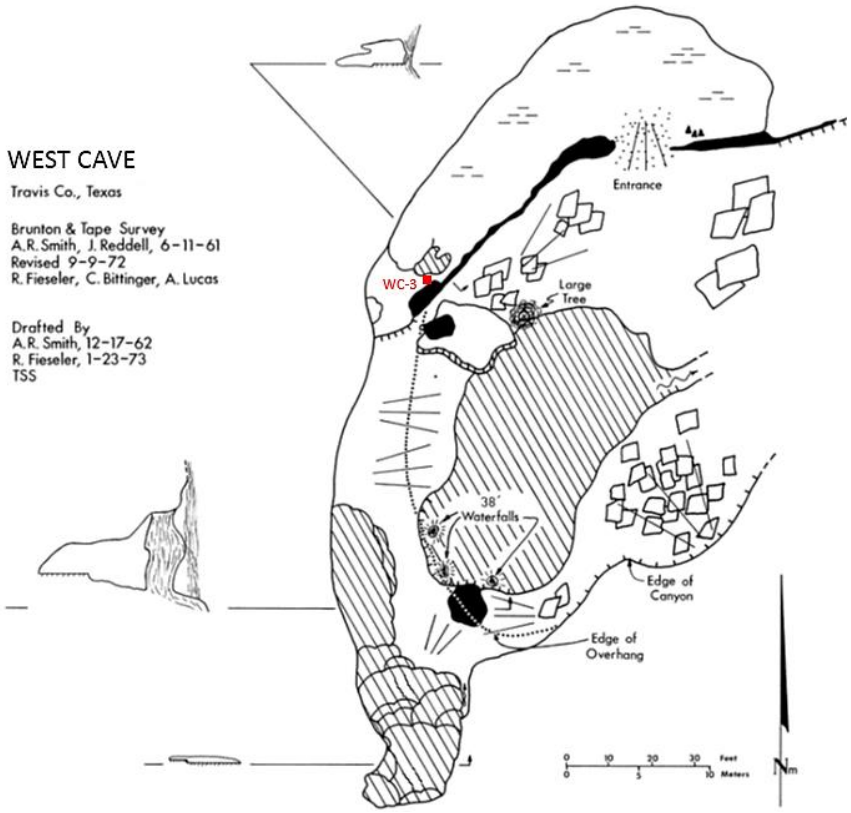

Fig. B4: Map of Westcave with studied sites marked. Figure modified from the Texas Speleological Survey.

Table B3: The maximum drip rate (mL/min) and drip rate coefficient of variability of the sites currently (2019) being monitored by the Banner Research Group, Jackson School of Geosciences, University of Texas at Austin. Sites used in this study are bolded.

Site	CoV	Max. drip rate
ISST Rear	**1.055407**	**6.617829**
ISLM Rear	**0.301696**	**0.413082**
ISSR3	**0.527549**	**11.713647**
ISSR5	**0.297049**	**31.52898**
ISSR7	**0.403108**	**3.356906077**
ISSR8	0.287617	1.73826
ISSR9	0.69255	0.44604
Drapery	3.953379	215
ISHW	**2.056256**	**485.29**
NBWS	**1.549425**	**263.9**
NBFE	**0.962726**	**7.74**
NBVC	1.175044	4.618333333
NBBC	0.430167	5.316
NBGN	0.494669	1.8
NBSB	0.844561	79.71
NBCT	0.608842	208.2
NBEL	1.331434	1087.3
WC-3	**3.600736**	**10.08**
WC-1	0.337241	0.965
WC-4	0.560731	0.258
WC-6	0.507077	9.03
WC-18	1.346967	1.762
WC-17	1.18683	4.851
CWNBD	**0.531357**	**2.294**
CWNHoW	**0.127979**	**0.119**

Table B4: Drip Water Residence Time model for Inner Space Cavern. Includes Austin rainfall $\delta^{18}O$, Georgetown period rainfall amounts (in.) (courtesy of NOAA), and the backward-projected amount-weighted running mean for periods of 6, 12, 18, 24, and 48 months.

Start date	End date	Rain δ18O	Rainfall (in)	Weighted value	6	12	18	24	48
2/25/09	4/22/09	-2.53	6.70	-16.95					
4/22/09	5/27/09	-3.20	4.45	-14.22					
5/27/09	6/27/09	-2.32	0.86	-1.99					
6/27/09	7/23/09	0.95	0.00	0.00					
7/23/09	8/22/09	-2.24	1.26	-2.82					
8/22/09	8/31/09	-1.49	1.44	-2.15	-2.59				
8/31/09	9/23/09	-6.25	9.45	-59.04	-4.02				
9/23/09	9/30/09	-5.47	1.22	-6.68	-4.09				
9/30/09	10/22/09	-5.43	5.64	-30.64	-4.83				
10/22/09	11/20/09	-8.35	3.31	-27.64	-5.65				
11/20/09	12/31/09	-5.60	3.40	-19.05	-5.75				
12/31/09	1/10/10	-7.32	0.00	0.00	-5.75				
1/10/10	1/15/10	-6.68	0.65	-4.34	-5.96				
1/15/10	1/27/10	-8.04	1.38	-11.09	-6.33				
1/27/10	2/21/10	-6.19	4.96	-30.70	-6.33				
2/21/10	2/28/10	-7.72	0.46	-3.55	-6.41				
2/28/10	3/20/10	-4.10	3.68	-15.09	-6.25	-5.03			
3/20/10	4/22/10	-1.96	1.80	-3.54	-5.35	-5.29			
4/22/10	5/23/10	-6.53	1.32	-8.63	-5.40	-5.56			
5/23/10	6/18/10	-6.99	2.69	-18.80	-5.65	-5.71			
6/18/10	8/15/10	-2.84	4.25	-12.06	-5.04	-5.45			
8/15/10	9/6/10	-8.57	1.05	-9.00	-5.02	-5.61			
9/6/10	9/12/10	-10.51	14.83	-155.91	-7.53	-6.92			
9/12/10	9/29/10	-3.48	0.05	-0.17	-7.52	-7.04	-6.07		
9/29/10	10/26/10	-2.80	0.27	-0.76	-7.95	-7.06	-6.40		
10/26/10	12/21/10	-6.01	0.66	-3.96	-8.33	-7.25	-6.62		
12/21/10	2/16/11	-4.45	5.00	-22.23	-7.74	-6.87	-6.51		
2/16/11	3/28/11	-1.20	0.38	-0.46	-7.72	-6.91	-6.48		
3/28/11	5/2/11	-2.10	0.73	-1.53	-8.45	-6.83	-6.51		
5/2/11	6/6/11	-8.00	0.87	-6.96	-8.42	-6.86	-6.64		
6/6/11	11/1/11	-4.42	3.31	-14.63	-4.50	-6.65	-6.58		
11/1/11	11/4/11	-4.30	0.00	0.00	-4.50	-6.71	-6.60		
11/4/11	1/2/12	-4.35	7.74	-33.67	-4.46	-6.32	-6.43		

1/2/12	2/17/12	-5.70	3.42	-19.49	-4.61	-6.45	-6.29		
2/17/12	5/10/12	-4.40	9.48	-41.71	-4.57	-6.24	-6.06	-5.62	
5/10/12	8/6/12	-3.41	2.76	-9.42	-4.50	-6.10	-5.96	-5.76	
8/6/12	9/20/12	-6.69	8.05	-53.84	-5.04	-6.14	-6.03	-5.94	
9/20/12	10/23/12	-1.63	2.21	-3.59	-4.77	-6.21	-5.87	-5.88	
10/23/12	1/17/13	-6.76	4.50	-30.41	-5.04	-6.21	-5.90	-5.91	
1/17/13	4/2/13	-3.93	2.02	-7.94	-4.98	-4.87	-5.84	-5.92	
4/2/13	5/18/13	-3.52	1.88	-6.62	-5.04	-4.83	-5.87	-5.93	
5/18/13	7/3/13	-4.04	2.29	-9.26	-4.90	-4.81	-5.91	-5.87	
7/3/13	8/21/13	-1.69	5.59	-9.43	-4.45	-4.50	-5.62	-5.66	
8/21/13	9/25/13	-7.21	3.39	-24.45	-4.86	-4.66	-5.64	-5.72	
9/25/13	10/24/13	-9.30	2.65	-24.65	-4.74	-4.89	-5.90	-5.73	
10/24/13	11/24/13	-6.73	6.60	-44.42	-5.43	-5.10	-5.93	-5.79	
11/24/13	12/28/13	-3.41	2.56	-8.73	-5.02	-5.00	-4.95	-5.74	
12/28/13	2/7/14	-3.42	0.47	-1.61	-5.08	-5.02	-4.94	-5.72	
2/7/14	4/4/14	-4.73	0.95	-4.49	-5.19	-5.01	-4.95	-5.69	-5.49
4/4/14	5/24/14	-5.58	5.29	-29.52	-5.36	-5.14	-4.98	-5.66	-5.63
5/24/14	6/23/14	-3.81	4.76	-18.14	-5.85	-5.01	-4.94	-5.58	-5.64
6/23/14	7/22/14	-3.60	4.38	-15.77	-5.33	-5.01	-4.89	-5.55	-5.60
7/22/14	8/28/14	-5.36	0.43	-2.30	-4.91	-5.09	-4.92	-5.60	-5.60
8/28/14	9/24/14	-8.46	3.11	-26.31	-4.87	-5.04	-5.01	-5.67	-5.68
9/24/14	11/5/14	-5.53	5.91	-32.68	-5.17	-5.23	-5.07	-5.63	-5.72
11/5/14	1/9/15	-6.78	4.41	-29.90	-5.44	-5.23	-5.15	-5.77	-5.71
1/9/15	5/20/15	-5.24	17.62	-92.31	-5.38	-5.26	-5.22	-5.68	-5.67
5/20/15	5/24/15	-4.17	1.71	-7.14	-5.30	-5.28	-5.19	-5.09	-5.66
5/24/15	5/26/15	-5.09	0.00	0.00	-5.49	-5.32	-5.27	-5.09	-5.61
5/26/15	10/21/15	-6.68	7.12	-47.58	-5.91	-5.75	-5.42	-5.18	-5.65
10/21/15	11/20/15	-2.80	13.97	-39.07	-5.11	-5.18	-4.97	-4.95	-5.43
11/20/15	11/30/15	-1.85	1.82	-3.37	-4.80	-4.97	-4.99	-4.93	-5.39
11/30/15	12/29/15	-5.32	2.12	-11.28	-4.73	-4.83	-4.92	-4.94	-5.37
12/29/15	2/25/16	-6.82	1.88	-12.82	-4.62	-4.93	-4.97	-4.98	-5.37
2/25/16	3/10/16	-4.82	2.69	-12.96	-4.29	-4.93	-5.00	-4.96	-5.35
3/10/16	3/22/16	-5.76	0.47	-2.71	-4.32	-4.94	-5.02	-4.97	-5.38
3/22/16	4/1/16	-1.39	0.44	-0.61	-4.27	-4.87	-5.20	-4.96	-5.40
4/1/16	4/14/16	-2.78	1.42	-3.95	-3.50	-4.90	-5.09	-4.98	-5.38
4/14/16	4/21/16	-2.64	4.24	-11.18	-3.90	-4.85	-4.86	-4.89	-5.29
4/21/16	5/12/16	-1.61	2.25	-3.62	-3.81	-4.74	-4.64	-4.87	-5.30
5/12/16	5/19/16	-4.69	0.95	-4.46	-3.65	-4.57	-4.68	-4.90	-5.28

5/19/16	6/3/16	-4.30	1.85	-7.95	-3.31	-4.48	-4.68	-4.77	-4.80
6/3/16	6/16/16	-9.86	2.45	-24.16	-4.17	-4.53	-4.82	-4.93	-4.87
6/16/16	7/1/16	-2.26	0.14	-0.32	-4.09	-4.24	-4.77	-4.85	-4.87
7/1/16	7/28/16	-0.94	0.80	-0.75	-4.00	-4.19	-4.78	-4.84	-4.85
7/28/16	8/17/16	-5.02	8.77	-44.01	-4.50	-4.32	-4.87	-4.88	-4.87
8/17/16	8/25/16	-5.08	2.70	-13.73	-4.97	-4.02	-4.87	-4.90	-4.88
8/25/16	9/2/16	-3.82	0.23	-0.88	-5.38	-4.51	-4.74	-5.04	-4.89
9/2/16	9/30/16	-4.43	0.10	-0.44	-5.41	-4.65	-4.68	-4.98	-4.88
9/30/16	10/14/16	-0.63	0.18	-0.11	-5.49	-4.58	-4.55	-4.87	-4.88
10/14/16	11/8/16	-4.84	2.20	-10.65	-4.69	-4.47	-4.36	-4.76	-4.88
11/8/16	11/11/16	-4.40	0.30	-1.32	-4.70	-4.44	-4.36	-4.79	-4.91
11/11/16	12/2/16	-3.04	0.49	-1.49	-4.85	-4.39	-4.35	-4.79	-4.88
12/2/16	12/9/16	-7.77	2.05	-15.94	-5.40	-4.66	-4.18	-4.85	-4.95
12/9/16	1/14/17	-3.51	1.04	-3.65	-5.23	-4.71	-4.63	-4.80	-4.97
1/14/17	1/23/17	-3.10	2.59	-8.03	-4.65	-4.86	-4.65	-4.80	-4.84
1/23/17	4/7/17	-3.13	5.55	-17.39	-4.07	-4.79	-4.44	-4.76	-4.83
4/7/17	4/14/17	-1.99	1.17	-2.33	-3.95	-4.70	-4.27	-4.73	-4.75
4/14/17	5/15/17	1.48	0.42	0.62	-3.64	-4.64	-4.18	-4.59	-4.74
5/15/17	5/30/17	-3.02	1.36	-4.10	-3.57	-4.14	-4.13	-4.51	-4.74
5/30/17	6/8/17	-7.72	0.00	0.00	-3.58	-4.15	-4.16	-4.40	-4.75
6/8/17	6/29/17	-3.29	0.68	-2.23	-2.90	-4.21	-4.19	-4.20	-4.87
6/29/17	7/19/17	-1.14	0.67	-0.76	-2.75	-3.79	-4.31	-4.17	-4.79
7/19/17	8/11/17	-4.68	3.95	-18.51	-3.24	-3.80	-4.49	-4.20	-4.70
8/11/17	8/25/17	0.03	0.04	0.00	-3.30	-3.79	-4.48	-3.95	-4.60
8/25/17	8/26/17	-9.56	0.54	-5.16	-3.94	-3.92	-4.56	-4.27	-4.64
8/26/17	8/27/17	-9.70	2.43	-23.56	-5.62	-4.49	-4.55	-4.57	-4.74
8/27/17	8/28/17	-13.33	0.91	-12.13	-6.76	-4.80	-4.76	-4.68	-4.80
8/28/17	9/27/17	-4.54	0.16	-0.73	-6.73	-4.80	-4.84	-4.61	-4.76
9/27/17	10/31/17	-5.41	1.84	-9.95	-6.72	-4.88	-4.83	-4.63	-4.81
10/31/17	12/5/17	-3.47	0.42	-1.46	-6.95	-4.60	-4.78	-4.61	-4.85
12/5/17	1/17/18	-6.85	4.22	-28.91	-7.76	-5.00	-5.05	-4.79	-4.92
1/17/18	2/28/18	-2.39	3.00	-7.18	-6.59	-4.89	-4.83	-4.72	-4.77
2/28/18	3/30/18	-3.12	2.92	-9.12	-5.85	-5.08	-4.72	-4.79	-4.69
3/30/18	5/31/18	-3.36	2.34	-7.87	-4.89	-5.06	-4.64	-4.85	-4.58
5/31/18	6/14/18	-1.80	1.24	-2.23	-4.18	-5.01	-4.55	-4.79	-4.43
6/14/18	7/18/18	-6.41	0.60	-3.85	-4.26	-5.15	-4.60	-4.83	-4.45

Table B5: Drip Water Residence Time model for Natural Bridge Caverns. Includes Austin rainfall $\delta^{18}O$, New Braunfels period rainfall amounts (in.) (courtesy of NOAA), and the backward-projected amount-weighted running mean for periods of 6, 12, 18, 24, and 48 months.

Start Date	End Date	Rain δ18O	Rainfall (in)	Weighted value	6	12	18	24	48
2/25/09	4/22/09	-2.53	3.96	-10.02					
4/22/09	5/27/09	-3.20	1.97	-6.30					
5/27/09	6/27/09	-2.32	0.25	-0.58					
6/27/09	7/23/09	0.95	0.52	0.50					
7/23/09	8/22/09	-2.24	0.91	-2.03					
8/22/09	8/31/09	-1.49	0.28	-0.42	-2.39				
8/31/09	9/23/09	-6.25	10.10	-63.10	-5.13				
9/23/09	9/30/09	-5.47	0.28	-1.53	-5.44				
9/30/09	10/22/09	-5.43	8.50	-46.17	-5.48				
10/22/09	11/20/09	-8.35	2.92	-24.38	-5.99				
11/20/09	12/31/09	-5.60	3.26	-18.26	-6.07				
12/31/09	1/10/10	-7.32	0.01	-0.07	-6.12				
1/10/10	1/15/10	-6.68	1.50	-10.02	-6.10				
1/15/10	1/27/10	-8.04	0.94	-7.55	-6.22				
1/27/10	2/21/10	-6.19	4.11	-25.44	-6.73				
2/21/10	2/28/10	-7.72	0.23	-1.78	-6.28				
2/28/10	3/20/10	-4.10	1.65	-6.77	-6.12	-5.41			
3/20/10	4/22/10	-1.96	1.89	-3.71	-5.36	-5.53			
4/22/10	5/23/10	-6.53	4.43	-28.95	-5.60	-5.75			
5/23/10	6/18/10	-6.99	13.07	-91.36	-6.23	-6.06			
6/18/10	8/15/10	-2.84	3.96	-11.23	-5.70	-5.91			
8/15/10	9/6/10	-8.57	0.36	-3.09	-5.72	-5.98	-5.57		
9/6/10	9/12/10	-10.51	6.78	-71.28	-6.88	-6.48	-6.24		
9/12/10	9/29/10	-3.48	0.48	-1.67	-7.14	-6.50	-6.31		
9/29/10	10/26/10	-2.80	0.04	-0.11	-7.24	-6.50	-6.32		
10/26/10	12/21/10	-6.01	0.35	-2.10	-7.48	-6.69	-6.37		
12/21/10	2/16/11	-4.45	4.23	-18.80	-7.93	-6.39	-6.31	-5.93	
2/16/11	3/28/11	-1.20	0.19	-0.23	-7.80	-6.43	-6.32	-6.10	
3/28/11	5/2/11	-2.10	0.07	-0.15	-4.30	-6.42	-6.32	-6.17	
5/2/11	6/6/11	-8.00	0.92	-7.36	-4.96	-6.44	-6.35	-6.21	
6/6/11	11/1/11	-4.42	10.26	-45.35	-4.62	-6.02	-6.16	-6.03	
11/1/11	11/4/11	-4.30	0.00	0.00	-4.59	-6.01	-6.05	-6.07	
11/4/11	1/2/12	-4.35	7.19	-31.28	-4.53	-5.79	-5.88	-5.95	

1/2/12	2/17/12	-5.70	6.57	-37.45	-4.86	-5.83	-5.86	-5.89	
2/17/12	5/10/12	-4.40	8.66	-38.10	-4.75	-5.75	-5.68	-5.75	
5/10/12	8/6/12	-3.41	8.10	-27.65	-4.41	-5.44	-5.43	-5.58	
8/6/12	9/20/12	-6.69	1.65	-11.04	-4.52	-5.13	-5.42	-5.51	
9/20/12	10/23/12	-1.63	4.15	-6.75	-4.19	-5.04	-5.23	-5.33	
10/23/12	1/17/13	-6.76	3.38	-22.84	-4.42	-5.11	-5.31	-5.38	
1/17/13	4/2/13	-3.93	1.15	-4.52	-4.09	-4.45	-5.36	-5.34	
4/2/13	5/18/13	-3.52	3.78	-13.30	-3.88	-4.40	-5.22	-5.25	-5.28
5/18/13	7/3/13	-4.04	4.89	-19.78	-4.12	-4.37	-4.85	-5.15	-5.31
7/3/13	8/21/13	-1.69	4.25	-7.17	-3.44	-4.20	-4.78	-5.00	-5.23
8/21/13	9/25/13	-7.21	4.02	-28.99	-4.50	-4.36	-4.88	-5.10	-5.29
9/25/13	10/24/13	-9.30	6.52	-60.64	-5.46	-4.80	-4.77	-5.40	-5.49
10/24/13	11/24/13	-6.73	1.64	-11.04	-5.61	-4.84	-4.81	-5.37	-5.53
11/24/13	12/28/13	-3.41	1.98	-6.75	-5.77	-4.77	-4.78	-5.11	-5.51
12/28/13	2/7/14	-3.42	0.57	-1.95	-6.14	-4.81	-4.77	-5.20	-5.45
2/7/14	4/4/14	-4.73	1.30	-6.15	-7.21	-4.80	-4.78	-5.18	-5.44
4/4/14	5/24/14	-5.58	4.06	-22.65	-6.79	-4.90	-4.83	-4.80	-5.44
5/24/14	6/23/14	-3.81	3.51	-13.37	-4.74	-4.76	-4.79	-4.77	-5.34
6/23/14	7/22/14	-3.60	1.04	-3.74	-4.38	-4.79	-4.74	-4.76	-5.32
7/22/14	8/28/14	-5.36	0.02	-0.11	-4.57	-5.03	-4.78	-4.75	-5.32
8/28/14	9/24/14	-8.46	3.37	-28.51	-5.60	-5.20	-4.94	-4.90	-5.38
9/24/14	11/5/14	-5.53	2.93	-16.20	-5.67	-5.53	-5.01	-4.93	-5.37
11/5/14	1/9/15	-6.78	7.18	-48.68	-6.13	-5.62	-5.12	-5.06	-5.42
1/9/15	5/20/15	-5.24	15.20	-79.63	-5.95	-5.56	-5.21	-5.06	-5.39
5/20/15	5/24/15	-4.17	2.25	-9.39	-5.90	-5.64	-5.37	-5.10	-5.39
5/24/15	5/26/15	-5.09	0.53	-2.70	-5.88	-5.76	-5.34	-5.10	-5.43
5/26/15	10/21/15	-6.68	11.65	-77.85	-5.90	-6.17	-5.70	-5.31	-5.49
10/21/15	11/20/15	-2.80	8.74	-24.44	-5.33	-5.71	-5.38	-5.10	-5.22
11/20/15	11/30/15	-1.85	1.42	-2.63	-4.94	-5.28	-5.35	-5.11	-5.25
11/30/15	12/29/15	-5.32	1.96	-10.43	-4.80	-5.25	-5.42	-5.25	-5.24
12/29/15	2/5/16	-6.82	1.23	-8.39	-4.95	-5.33	-5.52	-5.24	-5.02
2/5/16	3/10/16	-4.82	3.71	-17.88	-4.93	-5.32	-5.68	-5.37	-5.02
3/10/16	3/22/16	-5.76	0.99	-5.71	-3.85	-5.33	-5.61	-5.33	-5.02
3/22/16	4/1/16	-1.39	0.43	-0.60	-4.68	-5.29	-5.27	-5.33	-5.01
4/1/16	4/14/16	-2.78	1.53	-4.25	-4.80	-5.32	-5.19	-5.36	-5.00
4/14/16	4/21/16	-2.64	2.17	-5.72	-4.23	-5.25	-5.16	-5.37	-4.98
4/21/16	5/12/16	-1.61	2.14	-3.44	-3.43	-5.14	-5.07	-5.45	-4.93
5/12/16	5/19/16	-4.69	3.46	-16.23	-3.35	-4.95	-5.06	-5.34	-4.91

5/19/16	6/3/16	-4.30	6.48	-27.84	-3.58	-4.87	-4.98	-4.99	-4.92
6/3/16	6/16/16	-9.86	0.13	-1.28	-3.69	-4.66	-5.04	-4.96	-4.92
6/16/16	7/1/16	-2.26	0.22	-0.50	-3.77	-4.47	-5.05	-4.99	-4.94
7/1/16	7/28/16	-0.94	4.29	-4.04	-3.19	-4.19	-4.83	-4.81	-4.79
7/28/16	8/17/16	-5.02	6.34	-31.81	-3.91	-4.27	-4.70	-4.83	-4.83
8/17/16	8/25/16	-5.08	4.99	-25.37	-4.05	-3.79	-4.70	-4.81	-4.92
8/25/16	9/2/16	-3.82	0.28	-1.07	-3.94	-4.00	-4.51	-4.84	-4.89
9/2/16	9/30/16	-4.43	5.10	-22.61	-4.02	-4.12	-4.34	-4.83	-4.97
9/30/16	10/14/16	-0.63	0.26	-0.16	-4.00	-4.04	-4.33	-4.82	-4.92
10/14/16	11/8/16	-4.84	1.62	-7.84	-4.78	-4.00	-4.34	-4.70	-4.93
11/8/16	11/11/16	-4.40	1.14	-5.02	-4.64	-3.93	-3.88	-4.67	-4.96
11/11/16	12/2/16	-3.04	0.02	-0.06	-4.37	-3.89	-4.06	-4.50	-5.00
12/2/16	12/9/16	-7.77	5.05	-39.26	-5.68	-4.35	-4.47	-4.56	-5.21
12/9/16	1/14/17	-3.51	0.98	-3.44	-6.15	-4.38	-4.42	-4.56	-5.13
1/14/17	1/23/17	-3.10	2.85	-8.83	-5.53	-4.38	-4.30	-4.50	-4.87
1/23/17	4/7/17	-3.13	7.24	-22.69	-4.59	-4.32	-4.12	-4.03	-4.75
4/7/17	4/14/17	-1.99	2.78	-5.54	-4.22	-4.17	-3.99	-4.11	-4.71
4/14/17	5/15/17	1.48	2.04	3.02	-3.66	-3.89	-3.83	-3.99	-4.62
5/15/17	5/30/17	-3.02	0.67	-2.02	-2.39	-3.86	-3.85	-3.94	-4.61
5/30/17	6/8/17	-7.72	1.40	-10.80	-2.76	-3.99	-3.98	-3.97	-4.62
6/8/17	6/29/17	-3.29	1.91	-6.27	-2.76	-4.25	-4.05	-3.90	-4.62
6/29/17	7/19/17	-1.14	0.00	0.00	-2.46	-4.12	-4.01	-3.87	-4.63
7/19/17	8/11/17	-4.68	2.40	-11.24	-3.25	-4.03	-4.00	-3.92	-4.63
8/11/17	8/25/17	0.03	0.02	0.00	-4.74	-4.02	-3.98	-3.94	-4.52
8/25/17	8/26/17	-9.56	0.51	-4.87	-5.32	-4.05	-4.05	-4.03	-4.52
8/26/17	8/27/17	-9.70	3.52	-34.13	-6.76	-4.66	-4.70	-4.41	-4.54
8/27/17	8/28/17	-13.33	0.68	-9.07	-8.32	-4.82	-4.78	-4.49	-4.49
8/28/17	9/27/17	-4.54	1.84	-8.34	-7.54	-4.82	-4.73	-4.52	-4.50
9/27/17	10/31/17	-5.41	1.12	-6.06	-8.12	-4.84	-4.76	-4.52	-4.51
10/31/17	12/5/17	-3.47	1.17	-4.06	-7.53	-4.32	-4.76	-4.51	-4.23
12/5/17	1/17/18	-6.85	4.30	-29.45	-7.21	-4.66	-4.99	-4.93	-4.49
1/17/18	2/28/18	-2.39	2.64	-6.32	-5.39	-4.61	-4.84	-4.80	-4.47
2/28/18	3/30/18	-3.12	3.78	-11.81	-4.45	-4.78	-4.72	-4.66	-4.40
3/30/18	5/31/18	-3.36	2.17	-7.30	-4.28	-4.93	-4.66	-4.62	-4.34

Table B6: Drip Water Residence Time model for Cave without a Name. Includes Austin rainfall $\delta^{18}O$, Boerne period rainfall amounts (in.) (courtesy of NOAA), and the backward-projected amount-weighted running mean for periods of 6, 12, 18, 24, and 48 months.

Start Date	End Date	Rain δ18O	Rainfall (in)	Weighted value	6	12	18	24	48
5/18/13	7/3/13	-4.04	0.38	-1.54					
7/3/13	8/21/13	-1.69	1.30	-2.19					
8/21/13	9/25/13	-7.21	4.68	-33.75					
9/25/13	10/24/13	-9.30	4.34	-40.36					
10/24/13	11/24/13	-6.73	1.14	-7.67					
11/24/13	12/29/13	-3.41	2.90	-9.89	-6.47				
12/29/13	2/7/14	-3.42	0.25	-0.86	-6.48				
2/7/14	4/4/14	-4.73	0.77	-3.64	-6.83				
4/4/14	5/24/14	-5.58	4.78	-26.67	-6.28				
5/24/14	6/23/14	-3.81	4.77	-18.17	-4.58	-5.72			
6/23/14	7/22/14	-3.60	2.97	-10.69	-4.25	-5.52			
7/22/14	8/28/14	-5.36	1.00	-5.36	-4.50	-5.69			
8/28/14	9/24/14	-8.46	2.95	-24.96	-5.19	-5.73			
9/24/14	11/5/14	-5.53	7.33	-40.53	-5.31	-5.14			
11/5/14	1/9/15	-6.78	4.79	-32.48	-5.55	-5.33	-5.83		
1/9/15	5/20/15	-5.24	20.64	-108.13	-5.60	-5.40	-5.65		
5/20/15	5/24/15	-4.17	7.75	-32.34	-5.48	-5.25	-5.57		
5/24/15	5/27/15	-5.09	0.01	-0.05	-5.49	-5.25	-5.45	-5.49	
5/27/15	10/21/15	-6.68	4.96	-33.14	-5.42	-5.35	-5.29	-5.57	
10/21/15	11/20/15	-2.80	11.21	-31.35	-4.81	-5.02	-4.91	-5.27	
11/20/15	11/30/15	-1.85	2.64	-4.89	-4.45	-4.95	-4.86	-5.06	
11/30/15	12/29/15	-5.32	1.77	-9.42	-3.92	-4.95	-4.87	-4.84	
12/29/15	2/25/16	-6.82	2.15	-14.66	-4.11	-4.85	-4.93	-4.87	
2/25/16	3/10/16	-4.82	1.29	-6.22	-4.15	-4.77	-4.89	-4.92	
3/10/16	3/22/16	-5.76	1.96	-11.30	-3.70	-4.62	-4.98	-4.94	
3/22/16	4/1/16	-1.39	0.75	-1.04	-4.50	-4.19	-5.00	-4.91	
4/1/16	4/14/16	-2.78	2.66	-7.39	-4.73	-4.06	-4.91	-4.81	
4/14/16	4/21/16	-2.64	3.50	-9.23	-4.05	-3.91	-4.66	-4.77	
4/21/16	5/11/16	-1.61	2.87	-4.62	-3.05	-3.25	-4.44	-4.70	
5/11/16	5/19/16	-4.69	4.04	-18.95	-3.33	-3.71	-4.29	-4.69	
5/19/16	6/3/16	-4.30	5.77	-24.79	-3.37	-4.02	-3.93	-4.54	
6/3/16	6/16/16	-9.86	0.20	-1.97	-3.52	-3.98	-3.91	-4.46	
6/16/16	7/1/16	-2.26	0.22	-0.50	-3.62	-3.70	-3.90	-4.30	

7/1/16	7/28/16	-0.94	0.62	-0.58	-3.75	-3.56	-3.53	-3.91	
7/28/16	8/17/16	-5.02	2.89	-14.50	-4.46	-3.55	-3.90	-3.93	
8/17/16	8/25/16	-5.08	2.09	-10.62	-4.49	-3.75	-4.14	-3.98	
8/25/16	9/2/16	-3.82	0.20	-0.76	-4.65	-3.86	-4.07	-3.69	
9/2/16	9/30/16	-4.43	2.73	-12.10	-4.47	-4.13	-3.92	-4.00	
9/30/16	10/14/16	-0.63	0.00	0.00	-4.52	-4.52	-3.88	-4.16	
10/14/16	11/8/16	-4.84	1.23	-5.95	-4.81	-4.50	-3.80	-4.13	
11/8/16	11/11/16	-4.40	1.81	-7.96	-4.64	-4.58	-3.89	-3.98	
11/11/16	12/2/16	-3.04	0.03	-0.09	-4.48	-4.49	-3.99	-3.94	
12/2/16	12/9/16	-7.77	3.21	-24.95	-5.67	-5.24	-4.60	-4.19	
12/9/16	1/14/17	-3.51	0.79	-2.77	-5.90	-5.32	-4.90	-4.24	
1/14/17	1/23/17	-3.10	3.39	-10.51	-4.99	-4.89	-4.69	-4.24	
1/23/17	4/7/17	-3.13	5.72	-17.93	-4.30	-4.35	-4.43	-4.22	
4/7/17	4/14/17	-1.99	2.62	-5.22	-3.90	-4.06	-4.16	-4.26	
4/14/17	5/15/17	1.48	0.75	1.11	-3.66	-3.80	-4.02	-4.09	
5/15/17	5/30/17	-3.02	1.49	-4.50	-2.70	-3.74	-4.03	-4.00	
5/30/17	6/8/17	-7.72	1.46	-11.27	-3.13	-3.95	-4.13	-4.13	-4.72
6/8/17	7/1/17	-3.29	1.00	-3.29	-3.15	-3.88	-4.02	-4.12	-4.72
7/1/17	7/19/17	-1.14	0.79	-0.90	-2.97	-3.78	-3.94	-4.11	-4.72
7/19/17	8/11/17	-4.68	3.22	-15.09	-3.90	-3.31	-3.97	-4.08	-4.64
8/11/17	8/25/17	0.03	0.13	0.00	-4.33	-3.29	-3.96	-4.00	-4.50
8/25/17	8/26/17	-9.56	0.10	-0.96	-4.70	-3.36	-3.94	-4.02	-4.48
8/26/17	8/27/17	-9.70	0.77	-7.47	-4.61	-3.86	-4.08	-4.13	-4.54
8/27/17	8/28/17	-13.33	0.19	-2.53	-5.18	-4.53	-4.15	-4.19	-4.55
8/28/17	9/27/17	-4.54	2.11	-9.57	-5.46	-4.93	-3.70	-4.19	-4.55
9/27/17	10/31/17	-5.41	1.94	-10.49	-5.92	-5.26	-3.84	-4.26	-4.52
10/31/17	12/5/17	-3.47	0.99	-3.43	-5.65	-4.78	-3.93	-4.23	-4.54
12/5/17	1/17/18	-6.85	3.53	-24.18	-6.05	-5.42	-4.64	-4.16	-4.62
1/17/18	2/28/18	-2.39	2.68	-6.41	-4.95	-5.12	-4.68	-4.03	-4.57
2/28/18	3/30/18	-3.12	3.22	-10.06	-4.43	-4.80	-4.66	-4.04	-4.46
3/30/18	5/31/18	-3.36	4.74	-15.94	-4.12	-4.49	-4.52	-4.10	-4.36
5/31/18	6/13/18	-1.80	0.00	0.00	-3.96	-4.47	-4.34	-4.29	-4.27
6/13/18	7/13/18	-6.41	6.51	-41.75	-4.76	-4.80	-4.81	-4.81	-4.22

Table B7: Drip Water Residence Time model for Westcave Preserve. Includes Austin rainfall $\delta^{18}O$, Round Mountain period rainfall amounts (in.) (courtesy of NOAA), and the backward-projected amount-weighted running mean for periods of 6, 12, 18, 24, and 48 months.

Start Date	End Date	Rain δ18O	Rainfall (in)	Weighted value	6	12	18	24	48
1/2/12	2/17/12	-5.70	0.65	-3.71					
2/17/12	5/10/12	-4.40	8.21	-36.10					
5/10/12	8/6/12	-3.41	7.81	-26.64	-3.99				
8/6/12	9/20/12	-6.69	6.65	-44.44	-4.73				
9/20/12	10/23/12	-1.63	1.70	-2.75	-4.57				
10/23/12	1/17/13	-6.76	3.90	-26.35	-6.01				
1/17/13	4/2/13	-3.93	1.77	-6.93	-4.90	-4.79			
4/2/13	5/18/13	-3.52	6.93	-24.39	-4.58	-4.54			
5/18/13	7/3/13	-4.04	3.83	-15.47	-3.74	-4.51	-4.51		
7/3/13	8/21/13	-1.69	3.82	-6.45	-3.18	-4.44	-4.25		
8/21/13	9/25/13	-7.21	5.49	-39.59	-4.68	-4.45	-4.61		
9/25/13	10/24/13	-9.30	10.13	-94.21	-7.21	-5.95	-5.90		
10/24/13	11/24/13	-6.73	3.96	-26.62	-8.19	-5.95	-5.85		
11/24/13	12/28/13	-3.41	1.95	-6.65	-7.95	-5.91	-5.91		
12/28/13	2/7/14	-3.42	0.37	-1.25	-5.50	-6.44	-5.80	-5.39	
2/7/14	4/4/14	-4.73	1.30	-6.15	-3.89	-6.70	-5.85	-5.37	
4/4/14	5/24/14	-5.58	3.89	-21.68	-5.24	-7.24	-6.28	-5.51	
5/24/14	6/24/14	-3.81	3.53	-13.45	-4.74	-6.77	-6.28	-5.68	
6/24/14	7/22/14	-3.60	3.74	-13.46	-4.36	-4.77	-6.49	-5.43	
7/22/14	9/24/14	-8.46	7.62	-64.47	-6.14	-5.68	-6.80	-5.90	
9/24/14	11/5/14	-5.53	2.74	-15.15	-6.60	-5.85	-5.81	-5.83	
11/5/14	1/9/15	-6.78	2.34	-15.87	-7.52	-5.97	-5.76	-5.92	
1/9/15	5/20/15	-5.24	25.10	-131.50	-5.38	-5.63	-5.59	-5.91	
5/20/15	5/24/15	-4.17	2.67	-11.14	-5.26	-5.55	-5.53	-5.95	
5/24/15	5/29/15	-5.09	3.59	-18.29	-5.13	-5.65	-5.52	-6.12	
5/29/15	10/21/15	-6.68	6.97	-46.58	-5.74	-5.94	-5.66	-6.09	
10/21/15	11/20/15	-2.80	8.49	-23.74	-4.65	-5.05	-5.38	-5.32	
11/20/15	11/30/15	-1.85	0.53	-0.98	-4.46	-4.99	-5.46	-5.22	
11/30/15	12/29/15	-5.32	1.35	-7.18	-3.08	-4.92	-5.03	-5.27	
12/29/15	2/25/16	-6.82	1.50	-10.23	-5.44	-4.71	-5.05	-5.31	-5.34
2/25/16	3/10/16	-4.82	2.82	-13.59	-5.47	-4.78	-4.96	-5.30	-5.33
3/10/16	3/22/16	-5.76	0.52	-3.00	-5.54	-4.75	-4.74	-5.29	-5.39
3/22/16	4/1/16	-1.39	0.39	-0.54	-4.59	-3.80	-4.74	-5.34	-5.50

4/1/16	4/14/16	-2.78	1.92	-5.34	-3.14	-4.52	-4.54	-5.36	-5.39
4/14/16	4/21/16	-2.64	4.22	-11.13	-2.60	-4.01	-3.48	-4.82	-5.35
4/21/16	5/12/16	-1.61	1.43	-2.30	-2.48	-3.60	-3.70	-4.72	-5.26
5/12/16	5/19/16	-4.69	0.74	-3.47	-2.64	-3.27	-3.81	-4.64	-5.28
5/19/16	6/3/16	-4.30	3.61	-15.51	-3.68	-3.22	-3.80	-4.25	-5.35
6/3/16	6/16/16	-9.86	2.38	-23.47	-6.31	-4.20	-4.34	-4.58	-5.48
6/16/16	7/1/16	-2.26	1.30	-2.94	-5.75	-4.11	-4.10	-4.45	-5.57
7/1/16	7/28/16	-0.94	3.49	-3.29	-4.14	-3.62	-3.49	-3.65	-5.35
7/28/16	8/17/16	-5.02	0.00	0.00	-1.30	-3.94	-3.53	-3.93	-4.97
8/17/16	8/25/16	-5.08	0.00	0.00	-0.94	-4.23	-3.62	-3.97	-4.90
8/25/16	9/2/16	-3.82	0.59	-2.26	-3.82	-4.17	-3.93	-3.90	-4.92
9/2/16	9/30/16	-4.43	1.24	-5.50	-4.24	-4.16	-4.23	-3.75	-4.92
9/30/16	10/14/16	-0.63	0.10	-0.06	-4.05	-2.09	-4.17	-3.59	-4.92
10/14/16	11/8/16	-4.84	3.25	-15.73	-4.64	-3.10	-4.31	-3.71	-4.89
11/8/16	11/11/16	-4.40	0.31	-1.36	-4.69	-4.54	-3.03	-3.76	-4.93
11/11/16	12/2/16	-3.04	0.00	0.00	-4.80	-4.54	-3.14	-3.84	-4.98
12/2/16	12/9/16	-7.77	2.11	-16.40	-7.34	-5.44	-5.44	-4.49	-4.74
12/9/16	1/14/17	-3.51	1.19	-4.18	-6.24	-5.27	-5.18	-4.64	-4.70
1/14/17	1/23/17	-3.10	3.16	-9.80	-4.70	-4.70	-4.63	-4.42	-4.58
1/23/17	4/7/17	-3.13	6.17	-19.34	-3.17	-4.13	-4.13	-4.13	-4.20
4/7/17	4/14/17	-1.99	0.42	-0.84	-3.07	-3.89	-4.05	-3.50	-4.19
4/14/17	5/15/17	1.48	1.44	2.13	-2.25	-3.34	-3.63	-3.26	-4.00
5/15/17	5/30/17	-3.02	2.97	-8.96	-1.59	-3.29	-3.31	-3.59	-3.63
5/30/17	6/8/17	-7.72	1.55	-11.96	-3.15	-3.13	-3.65	-3.85	-3.89
6/8/17	6/29/17	-3.29	0.00	0.00	-4.63	-3.10	-3.65	-3.85	-3.91
6/29/17	7/19/17	-1.14	0.00	0.00	-7.72	-3.10	-3.13	-3.85	-3.87
7/19/17	8/11/17	-4.68	4.59	-21.50	-4.68	-3.75	-3.46	-3.96	-3.86
8/11/17	8/25/17	0.03	0.36	0.01	-4.34	-3.69	-3.45	-3.92	-3.78
8/25/17	8/26/17	-9.56	0.47	-4.49	-4.79	-4.72	-3.87	-3.91	-3.81
8/26/17	8/27/17	-9.70	2.73	-26.47	-8.69	-6.64	-5.05	-4.48	-4.14
8/27/17	8/28/17	-13.33	0.73	-9.73	-10.36	-7.00	-6.20	-4.72	-4.32
8/28/17	9/27/17	-4.54	1.12	-5.08	-9.01	-6.73	-6.86	-4.47	-4.48
9/27/17	10/31/17	-5.41	1.68	-9.09	-6.77	-6.54	-6.54	-4.57	-4.60
10/31/17	12/5/17	-3.47	0.87	-3.02	-4.68	-7.27	-6.32	-4.71	-4.58
12/5/17	1/17/18	-6.85	2.20	-15.07	-5.72	-7.44	-6.40	-5.40	-4.70
1/17/18	2/28/18	-2.39	1.24	-2.97	-4.89	-6.76	-6.66	-5.29	-4.37
2/28/18	3/30/18	-3.12	1.58	-4.93	-4.58	-5.30	-6.41	-5.58	-4.39
3/30/18	5/31/18	-3.36	5.98	-20.11	-3.18	-4.11	-5.32	-5.36	-4.51

Table B8: Average area rainfall used for each modeled event in the hypothetical speleothem model, separated by extreme event modeled.

Average Year	
Date	Rainfall (in.)
1-Jan	0.12
2-Jan	0.03
3-Jan	0.14
4-Jan	0.02
5-Jan	0.03
6-Jan	0.01
7-Jan	0.02
8-Jan	0.03
9-Jan	0.49
10-Jan	0.06
11-Jan	0.04
12-Jan	0.00
13-Jan	0.00
14-Jan	0.01
15-Jan	0.18
16-Jan	0.21
17-Jan	0.00
18-Jan	0.00
19-Jan	0.00
20-Jan	0.01
21-Jan	0.01
22-Jan	0.29
23-Jan	0.12
24-Jan	0.04
25-Jan	0.30
26-Jan	0.00
27-Jan	0.02
28-Jan	0.10
29-Jan	0.10
30-Jan	0.00
31-Jan	0.03
1-Feb	0.05
2-Feb	0.01
3-Feb	0.12

Drought Year	
Date	Rainfall (in.)
1-Jan	0.00
2-Jan	0.00
3-Jan	0.00
4-Jan	0.00
5-Jan	0.05
6-Jan	0.00
7-Jan	0.00
8-Jan	0.00
9-Jan	1.14
10-Jan	0.03
11-Jan	0.01
12-Jan	0.00
13-Jan	0.00
14-Jan	0.00
15-Jan	0.39
16-Jan	0.63
17-Jan	0.01
18-Jan	0.00
19-Jan	0.00
20-Jan	0.01
21-Jan	0.00
22-Jan	0.00
23-Jan	0.00
24-Jan	0.00
25-Jan	0.00
26-Jan	0.00
27-Jan	0.00
28-Jan	0.00
29-Jan	0.00
30-Jan	0.01
31-Jan	0.00
1-Feb	0.21
2-Feb	0.00
3-Feb	0.00

Hurricane Year	
Date	Rainfall (in.)
1-Jan	0.12
2-Jan	0.03
3-Jan	0.14
4-Jan	0.02
5-Jan	0.03
6-Jan	0.01
7-Jan	0.02
8-Jan	0.03
9-Jan	0.49
10-Jan	0.06
11-Jan	0.04
12-Jan	0.00
13-Jan	0.00
14-Jan	0.01
15-Jan	0.18
16-Jan	0.21
17-Jan	0.00
18-Jan	0.00
19-Jan	0.00
20-Jan	0.01
21-Jan	0.01
22-Jan	0.29
23-Jan	0.12
24-Jan	0.04
25-Jan	0.30
26-Jan	0.00
27-Jan	0.02
28-Jan	0.10
29-Jan	0.10
30-Jan	0.00
31-Jan	0.03
1-Feb	0.05
2-Feb	0.01
3-Feb	0.12

Wet Autumn Year	
Date	Rainfall (in.)
1-Jan	0.12
2-Jan	0.03
3-Jan	0.14
4-Jan	0.02
5-Jan	0.03
6-Jan	0.01
7-Jan	0.02
8-Jan	0.03
9-Jan	0.49
10-Jan	0.06
11-Jan	0.04
12-Jan	0.00
13-Jan	0.00
14-Jan	0.01
15-Jan	0.18
16-Jan	0.21
17-Jan	0.00
18-Jan	0.00
19-Jan	0.00
20-Jan	0.01
21-Jan	0.01
22-Jan	0.29
23-Jan	0.12
24-Jan	0.04
25-Jan	0.30
26-Jan	0.00
27-Jan	0.02
28-Jan	0.10
29-Jan	0.10
30-Jan	0.00
31-Jan	0.03
1-Feb	0.05
2-Feb	0.01
3-Feb	0.12

4-Feb	0.29	4-Feb	0.05	4-Feb	0.29	4-Feb	0.29
5-Feb	0.09	5-Feb	0.00	5-Feb	0.09	5-Feb	0.09
6-Feb	0.02	6-Feb	0.00	6-Feb	0.02	6-Feb	0.02
7-Feb	0.00	7-Feb	0.00	7-Feb	0.00	7-Feb	0.00
8-Feb	0.02	8-Feb	0.00	8-Feb	0.02	8-Feb	0.02
9-Feb	0.04	9-Feb	0.13	9-Feb	0.04	9-Feb	0.04
10-Feb	0.04	10-Feb	0.00	10-Feb	0.04	10-Feb	0.04
11-Feb	0.04	11-Feb	0.00	11-Feb	0.04	11-Feb	0.04
12-Feb	0.08	12-Feb	0.00	12-Feb	0.08	12-Feb	0.08
13-Feb	0.04	13-Feb	0.00	13-Feb	0.04	13-Feb	0.04
14-Feb	0.00	14-Feb	0.00	14-Feb	0.00	14-Feb	0.00
15-Feb	0.00	15-Feb	0.00	15-Feb	0.00	15-Feb	0.00
16-Feb	0.00	16-Feb	0.00	16-Feb	0.00	16-Feb	0.00
17-Feb	0.06	17-Feb	0.00	17-Feb	0.06	17-Feb	0.06
18-Feb	0.39	18-Feb	0.01	18-Feb	0.39	18-Feb	0.39
19-Feb	0.03	19-Feb	0.00	19-Feb	0.03	19-Feb	0.03
20-Feb	0.00	20-Feb	0.02	20-Feb	0.00	20-Feb	0.00
21-Feb	0.02	21-Feb	0.00	21-Feb	0.02	21-Feb	0.02
22-Feb	0.03	22-Feb	0.00	22-Feb	0.03	22-Feb	0.03
23-Feb	0.22	23-Feb	0.02	23-Feb	0.22	23-Feb	0.22
24-Feb	0.02	24-Feb	0.01	24-Feb	0.02	24-Feb	0.02
25-Feb	0.00	25-Feb	0.08	25-Feb	0.00	25-Feb	0.00
26-Feb	0.01	26-Feb	0.00	26-Feb	0.01	26-Feb	0.01
27-Feb	0.01	27-Feb	0.01	27-Feb	0.01	27-Feb	0.01
28-Feb	0.08	28-Feb	0.01	28-Feb	0.08	28-Feb	0.08
1-Mar	0.10	1-Mar	0.00	1-Mar	0.10	1-Mar	0.10
2-Mar	0.03	2-Mar	0.00	2-Mar	0.03	2-Mar	0.03
3-Mar	0.03	3-Mar	0.00	3-Mar	0.03	3-Mar	0.03
4-Mar	0.06	4-Mar	0.00	4-Mar	0.06	4-Mar	0.06
5-Mar	0.05	5-Mar	0.03	5-Mar	0.05	5-Mar	0.05
6-Mar	0.00	6-Mar	0.00	6-Mar	0.00	6-Mar	0.00
7-Mar	0.01	7-Mar	0.00	7-Mar	0.01	7-Mar	0.01
8-Mar	0.12	8-Mar	0.00	8-Mar	0.12	8-Mar	0.12
9-Mar	0.48	9-Mar	0.00	9-Mar	0.48	9-Mar	0.48
10-Mar	0.41	10-Mar	0.00	10-Mar	0.41	10-Mar	0.41
11-Mar	0.22	11-Mar	0.00	11-Mar	0.22	11-Mar	0.22
12-Mar	0.06	12-Mar	0.00	12-Mar	0.06	12-Mar	0.06
13-Mar	0.00	13-Mar	0.00	13-Mar	0.00	13-Mar	0.00

14-Mar	0.00	14-Mar	0.01	14-Mar	0.00	14-Mar	0.00
15-Mar	0.00	15-Mar	0.00	15-Mar	0.00	15-Mar	0.00
16-Mar	0.10	16-Mar	0.01	16-Mar	0.10	16-Mar	0.10
17-Mar	0.04	17-Mar	0.00	17-Mar	0.04	17-Mar	0.04
18-Mar	0.05	18-Mar	0.00	18-Mar	0.05	18-Mar	0.05
19-Mar	0.07	19-Mar	0.00	19-Mar	0.07	19-Mar	0.07
20-Mar	0.55	20-Mar	0.00	20-Mar	0.55	20-Mar	0.55
21-Mar	0.18	21-Mar	0.00	21-Mar	0.18	21-Mar	0.18
22-Mar	0.02	22-Mar	0.00	22-Mar	0.02	22-Mar	0.02
23-Mar	0.00	23-Mar	0.00	23-Mar	0.00	23-Mar	0.00
24-Mar	0.04	24-Mar	0.00	24-Mar	0.04	24-Mar	0.04
25-Mar	0.06	25-Mar	0.00	25-Mar	0.06	25-Mar	0.06
26-Mar	0.00	26-Mar	0.00	26-Mar	0.00	26-Mar	0.00
27-Mar	0.01	27-Mar	0.00	27-Mar	0.01	27-Mar	0.01
28-Mar	0.01	28-Mar	0.00	28-Mar	0.01	28-Mar	0.01
29-Mar	0.03	29-Mar	0.00	29-Mar	0.03	29-Mar	0.03
30-Mar	0.01	30-Mar	0.01	30-Mar	0.01	30-Mar	0.01
31-Mar	0.01	31-Mar	0.00	31-Mar	0.01	31-Mar	0.01
1-Apr	0.07	1-Apr	0.00	1-Apr	0.07	1-Apr	0.07
2-Apr	0.06	2-Apr	0.00	2-Apr	0.06	2-Apr	0.06
3-Apr	0.21	3-Apr	0.00	3-Apr	0.21	3-Apr	0.21
4-Apr	0.02	4-Apr	0.00	4-Apr	0.02	4-Apr	0.02
5-Apr	0.00	5-Apr	0.02	5-Apr	0.00	5-Apr	0.00
6-Apr	0.01	6-Apr	0.00	6-Apr	0.01	6-Apr	0.01
7-Apr	0.07	7-Apr	0.00	7-Apr	0.07	7-Apr	0.07
8-Apr	0.02	8-Apr	0.00	8-Apr	0.02	8-Apr	0.02
9-Apr	0.02	9-Apr	0.00	9-Apr	0.02	9-Apr	0.02
10-Apr	0.03	10-Apr	0.00	10-Apr	0.03	10-Apr	0.03
11-Apr	0.09	11-Apr	0.22	11-Apr	0.09	11-Apr	0.09
12-Apr	0.05	12-Apr	0.00	12-Apr	0.05	12-Apr	0.05
13-Apr	0.21	13-Apr	0.00	13-Apr	0.21	13-Apr	0.21
14-Apr	0.01	14-Apr	0.00	14-Apr	0.01	14-Apr	0.01
15-Apr	0.06	15-Apr	0.00	15-Apr	0.06	15-Apr	0.06
16-Apr	0.11	16-Apr	0.00	16-Apr	0.11	16-Apr	0.11
17-Apr	0.14	17-Apr	0.00	17-Apr	0.14	17-Apr	0.14
18-Apr	0.57	18-Apr	0.00	18-Apr	0.57	18-Apr	0.57
19-Apr	0.18	19-Apr	0.00	19-Apr	0.18	19-Apr	0.18
20-Apr	0.02	20-Apr	0.00	20-Apr	0.02	20-Apr	0.02

21-Apr	0.06	21-Apr	0.00	21-Apr	0.06	21-Apr	0.06
22-Apr	0.06	22-Apr	0.00	22-Apr	0.06	22-Apr	0.06
23-Apr	0.04	23-Apr	0.00	23-Apr	0.04	23-Apr	0.04
24-Apr	0.09	24-Apr	0.00	24-Apr	0.09	24-Apr	0.09
25-Apr	0.05	25-Apr	0.00	25-Apr	0.05	25-Apr	0.05
26-Apr	0.00	26-Apr	0.04	26-Apr	0.00	26-Apr	0.00
27-Apr	0.15	27-Apr	0.00	27-Apr	0.15	27-Apr	0.15
28-Apr	0.02	28-Apr	0.00	28-Apr	0.02	28-Apr	0.02
29-Apr	0.01	29-Apr	0.00	29-Apr	0.01	29-Apr	0.01
30-Apr	0.08	30-Apr	0.00	30-Apr	0.08	30-Apr	0.08
1-May	0.00	1-May	0.00	1-May	0.00	1-May	0.00
2-May	0.06	2-May	0.05	2-May	0.06	2-May	0.06
3-May	0.01	3-May	0.03	3-May	0.01	3-May	0.01
4-May	0.00	4-May	0.00	4-May	0.00	4-May	0.00
5-May	0.00	5-May	0.00	5-May	0.00	5-May	0.00
6-May	0.23	6-May	0.00	6-May	0.23	6-May	0.23
7-May	0.01	7-May	0.00	7-May	0.01	7-May	0.01
8-May	0.05	8-May	0.00	8-May	0.05	8-May	0.05
9-May	0.18	9-May	0.00	9-May	0.18	9-May	0.18
10-May	0.11	10-May	0.00	10-May	0.11	10-May	0.11
11-May	0.50	11-May	0.29	11-May	0.50	11-May	0.50
12-May	0.10	12-May	0.12	12-May	0.10	12-May	0.10
13-May	0.57	13-May	0.31	13-May	0.57	13-May	0.57
14-May	0.38	14-May	0.00	14-May	0.38	14-May	0.38
15-May	0.81	15-May	0.00	15-May	0.81	15-May	0.81
16-May	0.18	16-May	0.00	16-May	0.18	16-May	0.18
17-May	0.19	17-May	0.00	17-May	0.19	17-May	0.19
18-May	0.35	18-May	0.00	18-May	0.35	18-May	0.35
19-May	0.16	19-May	0.00	19-May	0.16	19-May	0.16
20-May	0.17	20-May	0.02	20-May	0.17	20-May	0.17
21-May	0.10	21-May	0.01	21-May	0.10	21-May	0.10
22-May	0.02	22-May	0.03	22-May	0.02	22-May	0.02
23-May	0.14	23-May	0.00	23-May	0.14	23-May	0.14
24-May	0.44	24-May	0.00	24-May	0.44	24-May	0.44
25-May	0.49	25-May	0.01	25-May	0.49	25-May	0.49
26-May	0.40	26-May	0.00	26-May	0.40	26-May	0.40
27-May	0.30	27-May	0.00	27-May	0.30	27-May	0.30
28-May	0.06	28-May	0.00	28-May	0.06	28-May	0.06

29-May	0.23	29-May	0.00	29-May	0.23	29-May	0.23
30-May	0.14	30-May	0.00	30-May	0.14	30-May	0.14
31-May	0.14	31-May	0.00	31-May	0.14	31-May	0.14
1-Jun	0.11	1-Jun	0.00	1-Jun	0.11	1-Jun	0.11
2-Jun	0.27	2-Jun	0.00	2-Jun	0.27	2-Jun	0.27
3-Jun	0.10	3-Jun	0.00	3-Jun	0.10	3-Jun	0.10
4-Jun	0.12	4-Jun	0.00	4-Jun	0.12	4-Jun	0.12
5-Jun	0.00	5-Jun	0.00	5-Jun	0.00	5-Jun	0.00
6-Jun	0.00	6-Jun	0.00	6-Jun	0.00	6-Jun	0.00
7-Jun	0.00	7-Jun	0.00	7-Jun	0.00	7-Jun	0.00
8-Jun	0.02	8-Jun	0.00	8-Jun	0.02	8-Jun	0.02
9-Jun	0.23	9-Jun	0.00	9-Jun	0.23	9-Jun	0.23
10-Jun	0.13	10-Jun	0.00	10-Jun	0.13	10-Jun	0.13
11-Jun	0.00	11-Jun	0.00	11-Jun	0.00	11-Jun	0.00
12-Jun	0.06	12-Jun	0.00	12-Jun	0.06	12-Jun	0.06
13-Jun	0.02	13-Jun	0.00	13-Jun	0.02	13-Jun	0.02
14-Jun	0.13	14-Jun	0.00	14-Jun	0.13	14-Jun	0.13
15-Jun	0.06	15-Jun	0.00	15-Jun	0.06	15-Jun	0.06
16-Jun	0.01	16-Jun	0.00	16-Jun	0.01	16-Jun	0.01
17-Jun	0.11	17-Jun	0.00	17-Jun	0.11	17-Jun	0.11
18-Jun	0.28	18-Jun	0.00	18-Jun	0.28	18-Jun	0.28
19-Jun	0.07	19-Jun	0.00	19-Jun	0.07	19-Jun	0.07
20-Jun	0.07	20-Jun	0.00	20-Jun	0.07	20-Jun	0.07
21-Jun	0.13	21-Jun	0.00	21-Jun	0.13	21-Jun	0.13
22-Jun	0.02	22-Jun	0.91	22-Jun	0.02	22-Jun	0.02
23-Jun	0.04	23-Jun	0.06	23-Jun	0.04	23-Jun	0.04
24-Jun	0.04	24-Jun	0.00	24-Jun	0.04	24-Jun	0.04
25-Jun	0.02	25-Jun	0.00	25-Jun	0.02	25-Jun	0.02
26-Jun	0.05	26-Jun	0.00	26-Jun	0.05	26-Jun	0.05
27-Jun	0.01	27-Jun	0.00	27-Jun	0.01	27-Jun	0.01
28-Jun	0.04	28-Jun	0.00	28-Jun	0.04	28-Jun	0.04
29-Jun	0.05	29-Jun	0.00	29-Jun	0.05	29-Jun	0.05
30-Jun	0.05	30-Jun	0.00	30-Jun	0.05	30-Jun	0.05
1-Jul	0.22	1-Jul	0.00	1-Jul	0.22	1-Jul	0.22
2-Jul	0.17	2-Jul	0.00	2-Jul	0.17	2-Jul	0.17
3-Jul	0.10	3-Jul	0.00	3-Jul	0.10	3-Jul	0.10
4-Jul	0.00	4-Jul	0.00	4-Jul	0.00	4-Jul	0.00
5-Jul	0.00	5-Jul	0.00	5-Jul	0.00	5-Jul	0.00

6-Jul	0.00	6-Jul	0.00	6-Jul	0.00	6-Jul	0.00
7-Jul	0.00	7-Jul	0.07	7-Jul	0.00	7-Jul	0.00
8-Jul	0.02	8-Jul	0.00	8-Jul	0.02	8-Jul	0.02
9-Jul	0.19	9-Jul	0.00	9-Jul	0.19	9-Jul	0.19
10-Jul	0.11	10-Jul	0.01	10-Jul	0.11	10-Jul	0.11
11-Jul	0.15	11-Jul	0.09	11-Jul	0.15	11-Jul	0.15
12-Jul	0.07	12-Jul	0.00	12-Jul	0.07	12-Jul	0.07
13-Jul	0.00	13-Jul	0.00	13-Jul	0.00	13-Jul	0.00
14-Jul	0.01	14-Jul	0.00	14-Jul	0.01	14-Jul	0.01
15-Jul	0.14	15-Jul	0.00	15-Jul	0.14	15-Jul	0.14
16-Jul	0.36	16-Jul	0.03	16-Jul	0.36	16-Jul	0.36
17-Jul	0.15	17-Jul	0.00	17-Jul	0.15	17-Jul	0.15
18-Jul	0.29	18-Jul	0.01	18-Jul	0.29	18-Jul	0.29
19-Jul	0.01	19-Jul	0.01	19-Jul	0.01	19-Jul	0.01
20-Jul	0.00	20-Jul	0.45	20-Jul	0.00	20-Jul	0.00
21-Jul	0.00	21-Jul	0.00	21-Jul	0.00	21-Jul	0.00
22-Jul	0.00	22-Jul	0.00	22-Jul	0.00	22-Jul	0.00
23-Jul	0.01	23-Jul	0.00	23-Jul	0.01	23-Jul	0.01
24-Jul	0.01	24-Jul	0.00	24-Jul	0.01	24-Jul	0.01
25-Jul	0.09	25-Jul	0.00	25-Jul	0.09	25-Jul	0.09
26-Jul	0.27	26-Jul	0.00	26-Jul	0.27	26-Jul	0.27
27-Jul	0.11	27-Jul	0.00	27-Jul	0.11	27-Jul	0.11
28-Jul	0.04	28-Jul	0.00	28-Jul	0.04	28-Jul	0.04
29-Jul	0.09	29-Jul	0.00	29-Jul	0.09	29-Jul	0.09
30-Jul	0.00	30-Jul	0.02	30-Jul	0.00	30-Jul	0.00
31-Jul	0.00	31-Jul	0.01	31-Jul	0.00	31-Jul	0.00
1-Aug	0.01	1-Aug	0.00	1-Aug	0.01	1-Aug	0.01
2-Aug	0.00	2-Aug	0.00	2-Aug	0.00	2-Aug	0.00
3-Aug	0.00	3-Aug	0.00	3-Aug	0.00	3-Aug	0.00
4-Aug	0.00	4-Aug	0.00	4-Aug	0.00	4-Aug	0.00
5-Aug	0.00	5-Aug	0.01	5-Aug	0.00	5-Aug	0.00
6-Aug	0.00	6-Aug	0.00	6-Aug	0.00	6-Aug	0.00
7-Aug	0.00	7-Aug	0.00	7-Aug	0.00	7-Aug	0.00
8-Aug	0.00	8-Aug	0.00	8-Aug	0.00	8-Aug	0.00
9-Aug	0.00	9-Aug	0.00	9-Aug	0.00	9-Aug	0.00
10-Aug	0.00	10-Aug	0.00	10-Aug	0.00	10-Aug	0.00
11-Aug	0.04	11-Aug	0.00	11-Aug	0.04	11-Aug	0.04
12-Aug	0.05	12-Aug	0.00	12-Aug	0.05	12-Aug	0.05

13-Aug	0.03	13-Aug	0.00	13-Aug	0.03	13-Aug	0.03
14-Aug	0.16	14-Aug	0.00	14-Aug	0.16	14-Aug	0.16
15-Aug	0.40	15-Aug	0.03	15-Aug	0.40	15-Aug	0.40
16-Aug	0.31	16-Aug	0.00	16-Aug	0.31	16-Aug	0.31
17-Aug	0.17	17-Aug	0.00	17-Aug	0.17	17-Aug	0.17
18-Aug	0.09	18-Aug	0.00	18-Aug	0.09	18-Aug	0.09
19-Aug	0.35	19-Aug	0.00	19-Aug	0.35	19-Aug	0.35
20-Aug	0.03	20-Aug	0.00	20-Aug	0.03	20-Aug	0.03
21-Aug	0.30	21-Aug	0.00	21-Aug	0.30	21-Aug	0.30
22-Aug	0.04	22-Aug	0.00	22-Aug	0.04	22-Aug	0.04
23-Aug	0.04	23-Aug	0.00	23-Aug	0.04	23-Aug	0.04
24-Aug	0.00	24-Aug	0.00	24-Aug	0.04	24-Aug	0.00
25-Aug	0.01	25-Aug	0.00	25-Aug	0.10	25-Aug	0.01
26-Aug	0.03	26-Aug	0.03	26-Aug	0.41	26-Aug	0.03
27-Aug	0.05	27-Aug	0.00	27-Aug	2.36	27-Aug	0.05
28-Aug	0.02	28-Aug	0.00	28-Aug	0.63	28-Aug	0.02
29-Aug	0.02	29-Aug	0.02	29-Aug	0.01	29-Aug	0.02
30-Aug	0.02	30-Aug	0.00	30-Aug	0.02	30-Aug	0.02
31-Aug	0.03	31-Aug	0.00	31-Aug	0.03	31-Aug	0.03
1-Sep	0.00	1-Sep	0.00	1-Sep	0.00	1-Sep	0.00
2-Sep	0.00	2-Sep	0.00	2-Sep	0.00	2-Sep	0.23
3-Sep	0.15	3-Sep	0.00	3-Sep	0.15	3-Sep	0.01
4-Sep	0.04	4-Sep	0.00	4-Sep	0.04	4-Sep	1.18
5-Sep	0.05	5-Sep	0.00	5-Sep	0.05	5-Sep	0.13
6-Sep	0.01	6-Sep	0.00	6-Sep	0.01	6-Sep	0.05
7-Sep	0.22	7-Sep	0.00	7-Sep	0.22	7-Sep	0.20
8-Sep	0.71	8-Sep	0.00	8-Sep	0.71	8-Sep	1.47
9-Sep	0.22	9-Sep	0.00	9-Sep	0.22	9-Sep	1.90
10-Sep	0.11	10-Sep	0.00	10-Sep	0.11	10-Sep	0.80
11-Sep	0.04	11-Sep	0.00	11-Sep	0.04	11-Sep	0.41
12-Sep	0.02	12-Sep	0.00	12-Sep	0.02	12-Sep	0.26
13-Sep	0.07	13-Sep	0.00	13-Sep	0.07	13-Sep	0.08
14-Sep	0.41	14-Sep	0.00	14-Sep	0.41	14-Sep	0.32
15-Sep	0.01	15-Sep	0.00	15-Sep	0.01	15-Sep	0.64
16-Sep	0.06	16-Sep	0.00	16-Sep	0.06	16-Sep	0.88
17-Sep	0.24	17-Sep	0.15	17-Sep	0.24	17-Sep	0.28
18-Sep	0.28	18-Sep	0.74	18-Sep	0.28	18-Sep	0.00
19-Sep	0.06	19-Sep	0.14	19-Sep	0.06	19-Sep	0.00

20-Sep	0.21	20-Sep	0.00	20-Sep	0.21	20-Sep	0.25
21-Sep	0.29	21-Sep	0.00	21-Sep	0.29	21-Sep	0.79
22-Sep	0.01	22-Sep	0.01	22-Sep	0.01	22-Sep	1.76
23-Sep	0.01	23-Sep	0.00	23-Sep	0.01	23-Sep	0.73
24-Sep	0.00	24-Sep	0.00	24-Sep	0.00	24-Sep	0.00
25-Sep	0.05	25-Sep	0.00	25-Sep	0.05	25-Sep	0.00
26-Sep	0.26	26-Sep	0.00	26-Sep	0.26	26-Sep	0.03
27-Sep	0.16	27-Sep	0.04	27-Sep	0.16	27-Sep	0.14
28-Sep	0.02	28-Sep	0.26	28-Sep	0.02	28-Sep	0.00
29-Sep	0.59	29-Sep	0.00	29-Sep	0.59	29-Sep	0.01
30-Sep	0.07	30-Sep	0.38	30-Sep	0.07	30-Sep	0.45
1-Oct	0.00	1-Oct	0.00	1-Oct	0.00	1-Oct	0.02
2-Oct	0.05	2-Oct	0.00	2-Oct	0.05	2-Oct	0.08
3-Oct	0.03	3-Oct	0.00	3-Oct	0.03	3-Oct	0.01
4-Oct	0.00	4-Oct	0.00	4-Oct	0.00	4-Oct	0.00
5-Oct	0.00	5-Oct	0.00	5-Oct	0.00	5-Oct	0.00
6-Oct	0.06	6-Oct	0.00	6-Oct	0.06	6-Oct	0.00
7-Oct	0.02	7-Oct	0.00	7-Oct	0.02	7-Oct	0.08
8-Oct	0.01	8-Oct	0.06	8-Oct	0.01	8-Oct	0.26
9-Oct	0.00	9-Oct	0.00	9-Oct	0.00	9-Oct	0.57
10-Oct	0.00	10-Oct	0.13	10-Oct	0.00	10-Oct	0.81
11-Oct	0.16	11-Oct	0.00	11-Oct	0.16	11-Oct	0.00
12-Oct	0.19	12-Oct	0.00	12-Oct	0.19	12-Oct	0.00
13-Oct	0.39	13-Oct	0.00	13-Oct	0.39	13-Oct	0.10
14-Oct	0.12	14-Oct	0.00	14-Oct	0.12	14-Oct	0.26
15-Oct	0.02	15-Oct	0.00	15-Oct	0.02	15-Oct	0.55
16-Oct	0.12	16-Oct	0.00	16-Oct	0.12	16-Oct	1.85
17-Oct	0.07	17-Oct	0.00	17-Oct	0.07	17-Oct	0.18
18-Oct	0.00	18-Oct	0.00	18-Oct	0.00	18-Oct	0.07
19-Oct	0.00	19-Oct	0.00	19-Oct	0.00	19-Oct	0.42
20-Oct	0.00	20-Oct	0.00	20-Oct	0.00	20-Oct	0.18
21-Oct	0.01	21-Oct	0.00	21-Oct	0.01	21-Oct	0.00
22-Oct	0.03	22-Oct	0.00	22-Oct	0.03	22-Oct	0.00
23-Oct	0.07	23-Oct	0.00	23-Oct	0.07	23-Oct	0.31
24-Oct	0.65	24-Oct	0.00	24-Oct	0.65	24-Oct	0.20
25-Oct	0.12	25-Oct	0.00	25-Oct	0.12	25-Oct	0.64
26-Oct	0.01	26-Oct	0.00	26-Oct	0.01	26-Oct	0.00
27-Oct	0.13	27-Oct	0.00	27-Oct	0.13	27-Oct	0.00

28-Oct	0.00	28-Oct	0.00	28-Oct	0.00	28-Oct	0.00
29-Oct	0.04	29-Oct	0.00	29-Oct	0.04	29-Oct	0.00
30-Oct	0.23	30-Oct	0.00	30-Oct	0.23	30-Oct	0.00
31-Oct	0.86	31-Oct	0.00	31-Oct	0.86	31-Oct	0.01
1-Nov	0.00	1-Nov	0.00	1-Nov	0.00	1-Nov	0.47
2-Nov	0.04	2-Nov	0.00	2-Nov	0.04	2-Nov	0.00
3-Nov	0.13	3-Nov	0.00	3-Nov	0.13	3-Nov	0.00
4-Nov	0.06	4-Nov	0.00	4-Nov	0.06	4-Nov	0.57
5-Nov	0.35	5-Nov	0.00	5-Nov	0.35	5-Nov	0.00
6-Nov	0.29	6-Nov	0.01	6-Nov	0.29	6-Nov	0.00
7-Nov	0.20	7-Nov	0.03	7-Nov	0.20	7-Nov	0.01
8-Nov	0.13	8-Nov	0.02	8-Nov	0.13	8-Nov	0.00
9-Nov	0.16	9-Nov	0.05	9-Nov	0.16	9-Nov	0.69
10-Nov	0.02	10-Nov	0.00	10-Nov	0.02	10-Nov	0.01
11-Nov	0.00	11-Nov	0.00	11-Nov	0.00	11-Nov	0.04
12-Nov	0.01	12-Nov	0.00	12-Nov	0.01	12-Nov	0.34
13-Nov	0.01	13-Nov	0.00	13-Nov	0.01	13-Nov	0.02
14-Nov	0.01	14-Nov	0.00	14-Nov	0.01	14-Nov	0.00
15-Nov	0.02	15-Nov	0.11	15-Nov	0.02	15-Nov	0.00
16-Nov	0.01	16-Nov	0.50	16-Nov	0.01	16-Nov	0.00
17-Nov	0.06	17-Nov	0.00	17-Nov	0.06	17-Nov	0.00
18-Nov	0.00	18-Nov	0.00	18-Nov	0.00	18-Nov	0.02
19-Nov	0.00	19-Nov	0.00	19-Nov	0.00	19-Nov	0.01
20-Nov	0.00	20-Nov	0.00	20-Nov	0.00	20-Nov	0.01
21-Nov	0.02	21-Nov	0.04	21-Nov	0.02	21-Nov	0.00
22-Nov	0.28	22-Nov	0.45	22-Nov	0.28	22-Nov	0.08
23-Nov	0.28	23-Nov	0.00	23-Nov	0.28	23-Nov	0.05
24-Nov	0.01	24-Nov	0.00	24-Nov	0.01	24-Nov	0.01
25-Nov	0.15	25-Nov	0.00	25-Nov	0.15	25-Nov	0.00
26-Nov	0.11	26-Nov	1.03	26-Nov	0.11	26-Nov	0.14
27-Nov	0.11	27-Nov	0.06	27-Nov	0.11	27-Nov	0.00
28-Nov	0.17	28-Nov	0.00	28-Nov	0.17	28-Nov	0.00
29-Nov	0.01	29-Nov	0.00	29-Nov	0.01	29-Nov	0.00
30-Nov	0.00	30-Nov	0.00	30-Nov	0.00	30-Nov	0.01
1-Dec	0.00	1-Dec	0.00	1-Dec	0.00	1-Dec	0.00
2-Dec	0.01	2-Dec	0.17	2-Dec	0.01	2-Dec	0.01
3-Dec	0.22	3-Dec	0.36	3-Dec	0.22	3-Dec	0.22
4-Dec	0.13	4-Dec	0.50	4-Dec	0.13	4-Dec	0.13

5-Dec	0.11	5-Dec	0.55	5-Dec	0.11	5-Dec	0.11
6-Dec	0.04	6-Dec	0.00	6-Dec	0.04	6-Dec	0.04
7-Dec	0.00	7-Dec	0.00	7-Dec	0.00	7-Dec	0.00
8-Dec	0.00	8-Dec	0.00	8-Dec	0.00	8-Dec	0.00
9-Dec	0.01	9-Dec	0.00	9-Dec	0.01	9-Dec	0.01
10-Dec	0.01	10-Dec	0.00	10-Dec	0.01	10-Dec	0.01
11-Dec	0.03	11-Dec	0.35	11-Dec	0.03	11-Dec	0.03
12-Dec	0.01	12-Dec	0.01	12-Dec	0.01	12-Dec	0.01
13-Dec	0.21	13-Dec	0.06	13-Dec	0.21	13-Dec	0.21
14-Dec	0.03	14-Dec	0.19	14-Dec	0.03	14-Dec	0.03
15-Dec	0.01	15-Dec	0.32	15-Dec	0.01	15-Dec	0.01
16-Dec	0.01	16-Dec	0.15	16-Dec	0.01	16-Dec	0.01
17-Dec	0.00	17-Dec	0.00	17-Dec	0.00	17-Dec	0.00
18-Dec	0.02	18-Dec	0.00	18-Dec	0.02	18-Dec	0.02
19-Dec	0.06	19-Dec	0.15	19-Dec	0.06	19-Dec	0.06
20-Dec	0.00	20-Dec	0.17	20-Dec	0.00	20-Dec	0.00
21-Dec	0.03	21-Dec	0.00	21-Dec	0.03	21-Dec	0.03
22-Dec	0.08	22-Dec	0.64	22-Dec	0.08	22-Dec	0.08
23-Dec	0.01	23-Dec	0.00	23-Dec	0.01	23-Dec	0.01
24-Dec	0.03	24-Dec	0.01	24-Dec	0.03	24-Dec	0.03
25-Dec	0.06	25-Dec	0.12	25-Dec	0.06	25-Dec	0.06
26-Dec	0.01	26-Dec	0.02	26-Dec	0.01	26-Dec	0.01
27-Dec	0.06	27-Dec	0.00	27-Dec	0.06	27-Dec	0.06
28-Dec	0.08	28-Dec	0.00	28-Dec	0.08	28-Dec	0.08
29-Dec	0.07	29-Dec	0.00	29-Dec	0.07	29-Dec	0.07
30-Dec	0.01	30-Dec	0.00	30-Dec	0.01	30-Dec	0.01
31-Dec	0.02	31-Dec	0.00	31-Dec	0.02	31-Dec	0.02

Table B9: Calculated $\delta^{18}O$ values (‰ vs. SMOW), both for drip water and calcite, used in the conceptual hypothetical speleothem model, divided by extreme event modeled. Values for the average year are non-event averages, with non-event dates in the other modeled years being the same. January-December of the drought year are an average all sites during 2011. August-November of the Hurricane Year are from NBWS 2017. September-December of the wet autumn year are an average of all sites for those months in 2018.

Average Year		
Date Plotted	Drip δ18O	Calcite δ18O
20-Jan	-4.28	-5.21
20-Feb	-4.02	-4.95
20-Mar	-4.44	-5.37
20-Apr	-3.88	-4.81
20-May	-4.24	-5.17
20-Jun	-4.04	-4.97
20-Jul	-4.07	-5.00
20-Aug	-3.91	-4.84
20-Sep	-4.28	-5.21
20-Oct	-4.43	-5.36
20-Nov	-4.20	-5.13
20-Dec	-4.39	-5.32

Drought Year		
Date Plotted	Drip δ18O	Calcite δ18O
20-Jan	-4.68	-5.61
20-Feb	-4.46	-5.39
20-Mar	-4.64	-5.57
20-Apr	-4.86	-5.79
20-May	-4.86	-5.79
20-Jun	-4.57	-5.50
20-Jul	-4.56	-5.49
20-Aug	-4.57	-5.50
20-Sep	-4.18	-5.11
20-Oct	-4.34	-5.27
20-Nov	-4.43	-5.36
20-Dec	-4.28	-5.21

Hurricane Year		
Date Plotted	Drip δ18O	Calcite δ18O
20-Jan	-4.70	-5.63
20-Feb	-4.44	-5.37
20-Mar	-4.62	-5.55
20-Apr	-4.47	-5.40
20-May	-4.61	-5.54
20-Jun	-4.49	-5.42
20-Jul	-4.71	-5.64
20-Aug	-5.94	-6.86
20-Sep		
20-Oct	-5.38	-6.31
20-Nov	-5.08	-6.01
20-Dec	-4.57	-5.50

Wet Autumn Year		
Date Plotted	Drip δ18O	Calcite δ18O
20-Jan	-4.66	-5.59
20-Feb	-4.52	-5.45
20-Mar	-4.59	-5.52
20-Apr	-4.58	-5.51
20-May	-4.54	-5.47
20-Jun	-4.58	-5.50
20-Jul	-4.55	-5.48
20-Aug	-4.64	-5.57
20-Sep	-4.72	-5.73
20-Oct	-4.80	-6.03
20-Nov	-4.74	-5.65
20-Dec	-4.80	-6.22

APPENDIX C- RESULTS

Table C1: Comparison of non-extreme event year average drip rates (mL/min) of each site used in this study to the average drip rate for each site during the year of 2011 and how this average compares.

Site	Classification	Average For Event[1]	Average, no event[2]	Difference	Std. Dev. No event[3]	>1 std. dev?
ISST Rear	Intermediate	0.28	1.76	1.48	1.71	N
ISLM Rear	Diffuse	0.17	0.24	0.07	0.07	Y
ISSR3	Intermediate	2.77	5.09	2.32	2.41	N
ISSR5	Intermediate	12.07	18.85	6.78	4.73	Y
ISHW	Conduit	0.11	42.65	42.54	84.58	N
ISSR7	Diffuse	2.50	2.24	0.26	0.60	N
NBFE	Intermediate	0.64	2.46	1.82	2.26	N
NBWS	Conduit	3.91	36.22	32.31	47.96	N
CWNBD	Diffuse	NA	1.05	NA	2.07	NA
CWNHoW	Diffuse	NA	0.18	NA	0.09	NA
WC-3	Conduit	0.12	0.15	0.03	0.07	N

[1]Average Jan. 1-Dec. 31, 2011

[2]2010, 2012, 2013, 2014, 2015, 2016

[3]2010, 2012, 2013, 2014, 2015, 2016

Table C2: Comparison of non-extreme event year average drip rates (mL/min) of each site used in this study to the average drip rate for each site during the duration of Hurricane Harvey and the cave's response to it and how this average compares.

Site	Classification	Average For Event[1]	Average, no event[2]	Difference	Std. Dev. No event[3]	>1 std. dev?
ISST Rear	Intermediate	0.51	1.76	1.25	1.71	N
ISLM Rear	Diffuse	0.23	0.24	0.01	0.07	N
ISSR3	Intermediate	4.66	5.09	0.43	2.41	N
ISSR5	Intermediate	19.40	18.85	0.55	4.73	N
ISHW	Conduit	138.34	42.65	95.69	84.58	Y
ISSR7	Diffuse	0.91	2.24	1.33	0.60	Y
NBFE	Intermediate	1.54	2.46	0.91	2.26	N
NBWS	Conduit	137.52	36.22	101.30	47.96	Y
CWNBD	Diffuse	1.08	1.05	0.03	2.07	N
CWNHoW	Diffuse	0.11	0.18	0.06	0.09	N
WC-3	Conduit	0.16	0.15	0.01	0.07	N

[1]Average Aug. 27-Oct. 31, 2017

[2]2010, 2012, 2013, 2014, 2015, 2016

[3]2010, 2012, 2013, 2014, 2015, 2016

Table C3: Comparison of non-extreme event year average drip rates (mL/min) of each site used in this study to the average drip rate for each site during the wet autumn of 2018 and how this average compares.

Site	Classification	Average For Event[1]	Average, no event[2]	Difference	Std. Dev. No event[3]	>1 std. dev?
ISST Rear	Intermediate	2.22	1.76	0.45	1.71	N
ISLM Rear	Diffuse	0.32	0.24	0.08	0.07	Y
ISSR3	Intermediate	4.91	5.09	0.18	2.41	N
ISSR5	Intermediate	17.65	18.85	1.20	4.73	N
ISHW	Conduit	11.66	42.65	30.99	84.58	N
ISSR7	Diffuse	0.73	2.24	1.51	0.60	Y
NBFE	Intermediate	4.85	2.46	2.40	2.26	Y
NBWS	Conduit	173.40	36.22	137.18	47.96	Y
CWNBD	Diffuse	1.76	1.05	0.71	2.07	N
CWNHoW	Diffuse	0.13	0.18	0.05	0.09	N
WC-3	Conduit	0.17	0.15	0.02	0.07	N

[1]Average Sept. 1-Dec. 31 2018

[2]2010, 2012, 2013, 2014, 2015, 2016

[3]2010, 2012, 2013, 2014, 2015, 2016

Table C4: Comparison of the non-extreme event year average $\delta^{18}O$ values (‰ vs. SMOW) of each site used in this study to the average $\delta^{18}O$ for each site during the drought of 2011.

Site	Classification	Average For Event[1]	Average, no event[2]*	Difference	Std. Dev. No event[3]	>1 std. dev?
ISST Rear	Intermediate	NA	-4.82	NA	0.11	NA
ISLM Rear	Diffuse	-4.70	-4.48	0.21	0.22	N
ISSR3	Intermediate	-4.32	-4.26	0.06	0.61	N
ISSR5	Intermediate	NA	-4.51	NA	0.06	NA
ISHW	Conduit	NA	-4.62	NA	0.16	NA
ISSR7	Diffuse	-4.89	-4.57	0.32	0.32	Y
NBFE	Intermediate	NA	-4.41	NA	0.23	NA
NBWS	Conduit	NA	-4.35	NA	0.28	NA
CWNBD	Diffuse	NA	-3.73	NA	0.70	NA
CWNHoW	Diffuse	NA	-2.52	NA	0.54	NA
WC-3	Conduit	-4.28	-4.51	0.24	0.20	Y

[1]Average Jan. 1-Dec. 31, 2011

[2]2010, 2012, 2013, 2014, 2015, 2016

[3]2010, 2012, 2013, 2014, 2015, 2016

*Jan-June 2017, 2018

Table C5: Comparison of the non-extreme event year average $\delta^{18}O$ values (‰ vs. SMOW) of each site used in this study to the average $\delta^{18}O$ for each site during Hurricane Harvey, 2017.

Site	Classification	Average For Event[1]	Average, no event[2]*	Difference	Std. Dev. No event[3]	>1 std. dev?
ISST Rear	Intermediate	-4.77	-4.82	0.05	0.11	N
ISLM Rear	Diffuse	-4.72	-4.48	0.24	0.22	Y
ISSR3	Intermediate	-4.38	-4.26	0.12	0.61	N
ISSR5	Intermediate	-4.43	-4.51	0.08	0.06	Y
ISHW	Conduit	-4.71	-4.62	0.09	0.16	N
ISSR7	Diffuse	-4.51	-4.57	0.06	0.32	N
NBFE	Intermediate	-5.16	-4.41	0.75	0.23	Y
NBWS	Conduit	-5.66	-4.35	1.31	0.28	Y
CWNBD	Diffuse	-4.45	-3.73	0.72	0.70	Y
CWNHoW	Diffuse	NA	-2.52	NA	0.54	NA
WC-3	Conduit	-4.73	-4.51	0.22	0.20	Y

[1]Average Aug. 27-Oct. 31, 2017

[2]2010, 2012, 2013, 2014, 2015, 2016

[3]2010, 2012, 2013, 2014, 2015, 2016

Table C6: δD (‰ vs. SMOW) values of ISHW, ISLM Rear, ISSR3, and Austin rainfall collected between May and December of 2017, including the period during which Hurricane Harvey affected the area (August 25-29, 2017).

Site	Date	δD (‰)
ISHW	5/19/2017	-27
ISHW	6/22/2017	-27.0
ISHW	8/29/2017	-29.0
ISHW	9/6/2017	-30.0
ISHW	9/11/2017	-29.0
ISHW	9/14/2017	-30.0
ISHW	9/23/2017	-28.0
ISHW	10/7/2017	-27.3
ISHW	10/28/2017	-27.0
ISHW	11/19/2017	-28.0
ISHW	12/21/2017	-28.0

Site	Date	δD (‰)
ISLM Rear	5/19/2017	-28.0
ISLM Rear	7/25/2017	-28.0
ISLM Rear	9/11/2017	-27.0
ISLM Rear	9/14/2017	-28.0
ISLM Rear	9/23/2017	-28.0
ISLM Rear	10/7/2017	-29.0
ISLM Rear	10/28/2017	-29.0
ISLM Rear	11/19/2017	-29.0
ISLM Rear	12/21/2017	-30.0

Site	Date	δD (‰)
ISSR3	5/19/2017	-27.0
ISSR3	6/22/2017	-26.0
ISSR3	7/25/2017	-26.0
ISSR3	8/29/2017	-27.0
ISSR3	9/6/2017	-27.0
ISSR3	9/11/2017	-27.0
ISSR3	9/14/2017	-27.0
ISSR3	9/23/2017	-26.5
ISSR3	10/7/2017	-27.0
ISSR3	10/28/2017	-26.0
ISSR3	11/19/2017	-26.0
ISSR3	12/21/2017	-27.0

Site	Mid Date	δD (‰)
UT roof	4/29/2017	4.0
UT roof	5/22/2017	-16.0
UT roof	6/3/2017	-50.0
UT roof	6/18/2017	-22.0
UT roof	7/9/2017	-9.0
UT roof	7/30/2017	-32.0
UT roof	8/18/2017	4.0
UT roof	8/25/2017	-65.0
UT roof	8/27/2017	-96.0
UT roof	9/12/2017	-22.0
UT roof	10/14/2017	-29.0
UT roof	11/17/2017	-10.5

Table C7: $\delta^{18}O$, δD, and deuterium excess (d) values for the analyzed samples of ISHW, ISLM Rear, and ISSR3 drip water and Austin rainfall.

Site	Date	δ18O	δD	d
ISHW	5/19/2017	-4.67	-27.00	10.40
	6/22/2017	-4.63	-27.00	10.07
	8/29/2017	-4.78	-29.00	9.22
	9/6/2017	-4.83	-30.00	8.64
	9/14/2017	-4.81	-30.00	8.52
	9/23/2017	-4.20	-28.00	5.57
	10/7/2017	-4.76	-27.33	10.74
	10/28/2017	-4.75	-27.00	10.99
	11/19/2017	-4.22	-28.00	5.78
	12/21/2017	-4.12	-28.00	4.94
ISLM Rear	5/19/2017	-4.687	-28.00	9.49
	7/25/2017	-4.785	-28.00	10.28
	9/11/2017	-4.822	-27.00	11.58
	9/14/2017	-4.758	-28.00	10.07
	9/23/2017	-4.051	-28.00	4.41
	10/7/2017	-4.80	-29.00	9.44
	10/28/2017	-4.87	-29.00	9.93
	11/19/2017	-4.50	-29.00	6.97
	12/21/2017	-4.34	-30.00	4.71
ISSR3	5/19/2017	-4.64	-27.00	10.09
	6/22/2017	-4.34	-26.00	8.70
	7/25/2017	-4.44	-26.00	9.55
	8/29/2017	-4.70	-27.00	10.60
	9/6/2017	-4.54	-27.00	9.35
	9/11/2017	-4.48	-27.00	8.84
	9/14/2017	-4.54	-27.00	9.36
	9/23/2017	-3.87	-26.50	4.48
	10/7/2017	-4.52	-27.00	9.18
	10/28/2017	-4.01	-26.00	6.12
	11/19/2017	-3.96	-26.00	5.71
	12/21/2017	-4.48	-27.00	8.85
Austin Rainfall	4/29/2017	1.48	4.00	-7.84
	5/22/2017	-3.02	-16.00	8.14
	6/3/2017	-7.72	-50.00	11.74
	6/18/2017	-3.29	-22.00	4.28
	7/9/2017	-1.14	-9.00	0.13
	7/30/2017	-4.68	-32.00	5.48
	8/18/2017	0.03	4.00	3.76
	8/25/2017	-9.56	-65.00	11.47
	8/27/2017	-13.33	-96.00	10.66
	9/12/2017	-4.54	-22.00	14.28
	10/14/2017	-5.41	-29.00	14.27
	11/17/2017	-3.47	-10.50	17.26

Table C8: Comparison of the non-extreme event year average $\delta^{18}O$ values (‰ vs. SMOW) of each site used in this study to the average $\delta^{18}O$ for each site during the 2018 wet autumn.

Site	Classification	Average For Event[1]	Average, no event[2]*	Difference	Std. Dev. No event[3]	>1 std. dev?
ISST Rear	Intermediate	-4.81	-4.82	0.01	0.11	N
ISLM Rear	Diffuse	-5.08	-4.48	0.60	0.22	Y
ISSR3	Intermediate	-4.57	-4.26	0.31	0.61	N
ISSR5	Intermediate	-4.47	-4.51	0.04	0.04	Y
ISHW	Conduit	-4.54	-4.62	0.08	0.16	N
ISSR7	Diffuse	-4.55	-4.57	0.02	0.32	N
NBFE	Intermediate	-5.03	-4.41	0.62	0.23	Y
NBWS	Conduit	-4.94	-4.35	0.59	0.28	Y
CWNBD	Diffuse	-5.15	-3.73	1.42	0.70	Y
CWNHoW	Diffuse	-4.06	-2.52	1.53	0.54	Y
WC-3	Conduit	-4.84	-4.51	0.33	0.20	Y

[1]Average Sept. 1-Dec. 31 2018

[2]2010, 2012, 2013, 2014, 2015, 2016

[3]2010, 2012, 2013, 2014, 2015, 2016

*Jan-June 2017, 2018

Table C9: Comparison of the non-extreme event year average growth rate values (mg/day) of each site used in this study to the average growth rate for each site during the 2011 drought.

Site	Classification	Average For Event[1]	Average, no event[2]*	Difference	Std. Dev. No event[3]	>1 std. dev?
ISST Rear	Intermediate	0.30	3.46	3.16	4.14	N
ISLM Rear	Diffuse	3.77	2.95	0.82	2.98	N
ISSR3	Intermediate	3.56	7.36	3.80	4.79	N
ISSR7	Diffuse	1.61	0.93	0.68	1.27	N
NBWS	Conduit	15.46	16.61	1.16	10.21	N
CWNBD	Diffuse	NA	2.53	NA	4.15	NA
CWNHoW	Diffuse	NA	-0.27	NA	0.22	NA
WC-3	Conduit	12.79	14.32	1.53	7.50	N

[1]Average Jan. 1 -Dec. 31, 2011

[2]2010, 2012, 2013, 2014, 2015, 2016

[3]2010, 2012, 2013, 2014, 2015, 2016

*Jan-June 2017 and 2018

Table C10: Comparison of the non-extreme event year average growth rate values (mg/day) of each site used in this study to the average growth rate for each site during Hurricane Harvey, 2017.

Site	Classification	Average For Event[1]	Average, no event[2]	Difference	Std. Dev. No event[3]	>1 std. dev?
ISST Rear	Intermediate	-0.12	3.46	3.58	4.14	N
ISLM Rear	Diffuse	-0.24	2.95	3.19	2.98	Y
ISSR3	Intermediate	4.03	7.36	3.33	4.79	N
ISSR7	Diffuse	-0.20	0.93	1.14	1.27	N
NBWS	Conduit	14.23	16.61	2.39	10.21	N
CWNBD	Diffuse	0.06	2.53	2.48	4.15	N
CWNHoW	Diffuse	-0.21	-0.27	0.06	0.22	N
WC-3	Conduit	35.97	14.32	21.66	7.50	Y

[1]Average Aug. 27-Oct. 31, 2017

[2]2010, 2012, 2013, 2014, 2015, 2016

[3]2010, 2012, 2013, 2014, 2015, 2016

Table C11: Comparison of the non-extreme event year average growth rate values (mg/day) of each site used in this study to the average growth rate for each site during the wet autumn of 2018.

Site	Classification	Average For Event[1]	Average, no event[2]	Difference	Std. Dev. No event[3]	>1 std. dev?
ISST Rear	Intermediate	6.76	3.46	3.31	4.14	N
ISLM Rear	Diffuse	-0.14	2.95	3.09	2.98	Y
ISSR3	Intermediate	7.09	7.36	0.27	4.79	N
ISSR7	Diffuse	0.59	0.93	0.34	1.27	N
NBWS	Conduit	21.82	16.61	5.21	10.21	N
CWNBD	Diffuse	2.08	2.53	0.45	4.15	N
CWNHoW	Diffuse	-0.32	-0.27	0.04	0.22	N
WC-3	Conduit	17.60	14.32	3.28	7.50	N

[1]Average Sept. 1-Dec. 31 2018

[2]2010, 2012, 2013, 2014, 2015, 2016

[3]2010, 2012, 2013, 2014, 2015, 2016

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